TARGA 3000
INFINITE EDITING

Configuration Cookbook

Updated 06/06/02

PINNACLE SYSTEMS

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1 General Information

1.1 Introduction

There are a lot of talented computer techies in the non-linear editing industry, and for them, Jacques Pepin (popular chef extraordinaire) summed it up nicely: "For people like us who love to cook, it is easier, more fun, more exciting, and more rewarding to cook without any recipes." We hope they never waver their quest for the perfect NLE, and we actually stand to learn quite a lot from them. However, for those who would rather cook by the book, this "cookbook" provides information which will help the computer technician understand how to tailor a system around the TARGA 3000 family of products. For those who would rather edit than cook computers, Pinnacle Systems Certified or Recommended Workstations are listed here.

The individual using this document must be technically capable to understand and interpret this information. Neither this document nor Pinnacle Systems Support are meant to educate the computing novice or casual integrator about the details needed to construct a reliable, high performance editing workstation. Experience has proved that a better use of time and money is to rely on a Pinnacle Systems Authorized VAR (Value Added Reseller) to configure and support a fully integrated TARGA 3000 editing workstation. For a list of Authorized VARS, visit Pinnacle System's website at www.pinnaclesys.com.

This is a working document, periodically updated as new information or knowledge is acquired. Regardless of the advice given here, Pinnacle Systems does not warrant or guarantee the performance of the systems or components recommended.

1.2 Related Documents

Specifics of TARGA 3000 installation can be found in the TARGA 3000 installation guide that comes with the product. Usage is covered in the TARGA 3000 User Guide.

There is a troubleshooting guide and frequently asked questions page on the TARGA 3000 support site. Please consult these to avoid common problems.

For information on how to contact Pinnacle Systems, please see
http://www.pinnaclesys.com/support/contact/

Sales and Customer Service: 800-522-8783
Technical Support for TARGA 3000: targa-support@pinnaclesys.com or call 317-577-8788
Questions about this document: targa-support@pinnaclesys.com
Product Manager for TARGA 3000: Michael Asebrook (masebrook@pinnaclesys.com)

2 Certified Workstations and Motherboards

2.1 What Does Certified Mean?

A computer workstation or peripheral that has been certified by Pinnacle Systems means that the certified equipment meets or exceeds our requirements for a particular product, and that the same model(s) from this manufacturer will perform at a predictable level of compliance. Certified status also means that the workstation or equipment vendor will continue to work with Pinnacle Systems to resolve issues that may arise from the recommendations of this or other Pinnacle support documents. Please note that we cannot guarantee performance or compatibility with systems that are configured outside of our recommendations.

2.2 System Requirements

All TARGA 3000 workstations need the following components. This is a minimum requirements list for reference purposes only, the actual end-product should be customized to the format you will be working with (i.e. uncompressed YUV or DV). Consult the following section "Choosing the Right Ingredients" for more specific requirements:

- PC Workstation based on i440BX,i815, i840 or Serverworks chipsets
- 256 MB / 512MB RAM (SDRAM or RIMM)
- Ultra3 (160m) SCSI Controller for AV drives or array
- AV Capable Drives or Arrays. 2 striped drives are required for MPEG2/DV, 4 for dual stream uncompressed, 8 for 3 stream
- Certified Graphics Adapter
- 9 GB or Larger System Disk (EIDE or SCSI) - Microsoft Windows NT 4.0 Workstation (NT Server not recommended) with Service Pack 5, Windows 2000 Service Pack 2[1]
-Direct X 8.0a (You can obtain this version of DirectX at http://www.microsoft.com/directx/homeuser/downloads/default.asp
- Supported Editing Application (i.e. Adobe Premiere, in-sync Speed Razor, discreet edit 6.5)

2.3 Choosing the Right Ingredients

The TARGA 3000 Family of software and hardware is scaleable, meaning that better performance will be realized with faster systems. System requirements will vary, depending on the format being used. For example, if DV25 is used for acquisition and editing, the requirements are not as high as YUV. The following codec choices will help define the "strength" of the system needed:

DV25. This is an "industrial" quality (4:1:1 / 4:2:0) codec. It is conservative on disk usage (12 GB/hour), data rates up to 3.6 MBps per stream and has less chroma bandwidth than the other codecs. If planning on effects work, consider one of the higher-quality codecs.

MPEG2. This is the closest equivalent to the MJPEG format that users are accustomed to in other high-performance editing systems. Disk usage at the highest quality setting is 24 GB/hour. The data rate can be set between 10 Mbits/sec (1.2 MBps., offline quality) and 50 Mbits/sec (6.25 MBps., online quality) per stream. The MPEG2 codec in TARGA 3000 is I-frame only, and can be edited with frame accuracy. If image quality and disk usage are important, MPEG2 is recommended.

[1] As of June 6th, 2002, the Windows XP operating system is unsupported.

YUV. This is uncompressed D1(4:2:2) quality. Disk usage is high, about 72 GB/hour, and the data rate is about 20 MBps per stream. Recommended for high quality or multi-layer work and compositing.

RGBA. This is uncompressed D1(4:4:4:4) quality with no sacrifice in chroma bandwidth. Disk usage is about 144 GB/hour, or data rate of 40 MBps per stream. This is only useful if clips are imported directly into Adobe After Effects or other compositing desktop applications that work with this format.

2.4 Currently certified workstations

Compaq Workstation SP750
IBM Intellistation MPro 6868-xxU
IBM Intellistation MPro 6889-xxU (OEM model)
IBM Intellistation ZPro 6866-xxU
Dell 620
HP Kayak XU 800
SGI 550
HP Workstation X4000
Compaq EVO Workstation W8000
Dell Precision 530
IBM Intellistation MPro 6850 **New!**

2.5 Currently certified motherboards

64 bit PCI motherboards

Iwill DCA200N
Supermicro 370DL3
Tyan 1867
Supermicro PIIIDR3
Tyan Thunder i840 (S2520)
Tyan Thunder K7 (S2462)
Iwill DX400-SN
SuperMicro P4DC6
Tyan Tiger MP (S2460)
Tyan Thunder i860 (S2603)
Tyan Tiger MPX (S2466) **New!**

32 bit PCI motherboards

Intel SE440BX-2 "Seattle"
Supermicro P6DBE
Supermicro 370SSR
Intel 815DEEA(L)
Intel D850GB
Supermicro 370SSA
Intel D845WN
Intel D850MV **New!**
Intel D845BG **New!**

2.6 Incompatible hardware list

This is a list of systems and components found incompatible with TARGA 3000. This list will periodically change.

Asus P2B-DS
Asus P3B-F
Asus P3V4X
DFI P2XBL/S
Gigabyte GA-6BXC
Gigabyte BX-2000
Microstar MS-6199

3 System Considerations

3.1 Which PCI Chipset is Best?

The i840 is the recommended chipset for high performance TARGA 3000 systems since it offers full support for 64 bit PCI. In addition the ServerWorks chipsets have been certified, although they have the disadvantage that only PCI graphics cards can be used with this chipset. There are problems performing DMA transfers to AGP with the ServerWorks chipset, and so overlay cannot work in such configurations. In addition the Intel 440BX, 850, 845 and i815 chipsets have been certified. These do not offer the same performance as the 64 bit i840 (no more than 2 streams of uncompressed can be played), but are much better value. More recently we have also certified the AMD-760MP chipset for use with the Athlon processors. It is wise to follow the instructions in this cookbook to ensure that you will get the best performance and compatibility out of your system.

3.2 What BIOS Will Work?

No known issues exist with the major BIOS vendors (American Megatrends or AMI), Phoenix, or Award at this time. The BIOS is responsible for configuring the resources used by components in a system. After a system boots, BIOS hands over a list of detected devices and I/O addresses to the Windows NT HAL (Hardware Abstraction Layer). From here, Windows NT manages the allocation of system resources to all supported devices. BIOSes are revised routinely by motherboard manufacturers, and can affect a system configuration.

3.3 TARGA 3000, IRQs & DMA

The TARGA 3000 uses DMA (Direct Memory Access) channels to quickly transfer large amounts of data to system memory and back, not IRQ (Interrupt Request). DMA transfers are more efficient than IRQ channel requests, as they are not "interrupted" by time-share requests used by IRQ cycles. When a device requires service from the processor, it flags the system by asserting a hardware interrupt request (IRQ) . Interrupt requests have higher priority than normal operating code, so the processor has to stop what it was executing and service the request before resuming.

That said, IRQ allocation at the BIOS level must still be managed. (Pinnacle's certification reports for both systems and motherboards will show the preferred PCI slot and associated IRQ positions for typical TARGA installations.) For instance, if two devices (such as network adapters or SCSI controllers and TARGA) are assigned the same IRQ at the BIOS level, BIOS will happily report to NT's HAL that both devices can share the same IRQ space. HAL may then continue the shared relationship, and performance may degrade for one or both devices when both are used at peak levels. A quick check in NT's Diagnostics Resources applet is a good place to start.

All interrupts have a priority:

(Highest Priority) NMI, IRQ 0, 1, 2, 9, 10, 11, 12, 13, 14, 15, 3, 4, 5, 6, 7, 8 (Lowest Priority)

Most of the interrupts are pre-assigned, leaving only three or four available for TARGA, SCSI controller(s), sound cards and network adapters. BIOS usually shows IRQ 9, 10, and 11 available and possibly IRQ 5 and 15 to assign to any additional device. This is how IRQs are typically assigned:

NMI - Non-maskable interrupt used to signal serious failures.

IRQ 0 - System Timer IRQ	08 - Real-time Clock
IRQ 1 - Keyboard	IRQ 09 - Available
IRQ 2 - Cascade Interrupt	IRQ 10 - Available

IRQ 3 - COM2
IRQ 4 - COM1
IRQ 5 - Available or LPT2
IRQ 6 - Floppy Drive
IRQ 7 - LPT1
IRQ 11 - Available
IRQ 12 - Bus Mouse
IRQ 13 - FPU
IRQ 14 - Primary IDE Interface
IRQ 15 - Secondary IDE Interface

BIOS Tip: TARGA must not share an interrupt assignment with another device in the system, and TARGA should be assigned an interrupt of 9, 10 or 11.

3.4 How Much RAM is Necessary?

TARGA 3000 will barely function with a minimum 128MB of system memory but performance increases dramatically when more RAM is added. 256MB of RAM is recommended (and 512MB will boost performance further). Under Targa 3000 version 1.5 software, in order to take advantage of the new features, we strongly recommend 512MB of memory or higher. TARGA is competing with the operating system and any other applications that may be running in the background. Whenever an application is launched (i.e. TitleDeko) physical RAM must be allocated to the new process. When the physical RAM amount is exceeded, the operating system must page out portions of the existing physical RAM to a page or swap file on the hard drive. Since a hard drive is much slower than memory the paging process slows down system performance.

3.5 Overclocking

Increasing the bus speed of the motherboard is not supported. The common practice of increasing the multiplier of bus speed frequency has been shown to lower the overall reliability and predictability of most systems, and therefore is not recommended on a TARGA 3000 workstation

3.6 Operating System

TARGA 3000 v 1.0 / 1.0.1 / 1.0.2 requires Windows NT 4.0 Workstation (build 1381, Service Pack 5 or above).
TARGA 3000 v 1.1/1.5 supports Windows 2000 in addition to Windows NT 4.0

Windows XP Professional is officially not supported. Please be advised for future support of Windows XP Professional.

Use Windows NT Service Pack 5 or newer for TARGA 3000. If issues arise because of a service pack update, we will issue a public statement via our web site at www.pinnaclesys.com.

3.7 Processors

The TARGA 3000 has been certified with the following processors :

- PIII 500 MHz and higher
- PIII Xeon 500MHz and higher
- P4 1Ghz and higher
- AMD Athlon, Athlon XP, Athlon MP 1.0GHz and higher

Dual processor workstations are highly recommended if TitleDeko titles, multiple audio and graphics layers will be used. By design Windows NT supports a symmetrical multiprocessing (SMP) environment. Adobe Premiere can also take advantage of SMP for specific functions. TARGA 3000 takes advantage of multithreading but does not benefit from SMP environments.

TARGA 3000 is fully compatible with Intel processors that employ SIMD technology. However, TARGA 3000 does not currently take advantage of the SIMD instruction set.

AMD Athlon processors: These processors are fully x86 compliant so they should present no compatibility problems to TARGA 3000.

Xeon Processors: This enhanced version of the Pentium II and III series allows faster L2 cache performance, as it operates at the same speed (measured in MHz) as the core processor. The cache on a regular Pentium II or III operates at half the core speed. Though this sounds exciting, tests in the trade publications have not shown substantial increase of performance in non-linear editing systems.

3.8 Virtual Memory

Virtual memory should be fixed in size and should neither be smaller nor more than 25MB larger than the physical memory in the machine. Furthermore the virtual memory should be set up on a partition other than the operating system and applications (pagefile.sys). This prevents excessive fragmentation of the disk which impacts performance. Virtual memory should not be put on the video drive for the same reason. Ideally, it should have its own partition on the system drive and the system drive should be chosen to be fast.

3.9 TSRs

Software such as Scheduler, Task Reminder, Microsoft Outlook, Real Player and Screen Savers can interrupt a T3K session causing drop frames and other performance problems. All TSRs should be disabled and the workstation should ideally be disconnected from the network during an edit session.

3.10 Bus Mastering

Make sure that Bus Mastering is enabled in the BIOS for all PCI slots. This is a requirement.

4 Certified Workstations

4.1 IBM Intellistation Zpro model 6866-xxU

IBM Product Information

64-bit PCI solution from IBM. Base unit for the TARGA 3000 Ready-to-Edit solution

Tested Configuration

- BIOS version PFKT 32.0 dated 02/24/00
- Model 6866-40U
- Adaptec AIC-7899 dual Ultra3 SCSI controller (onboard)
- Pentium III Xeon 866MHz "Coppermine" 133 MHz FSB
- 512 MB RDRAM 133 MHz
- Matrox Millenium G400 single or dual head 32MB display adapter
+ Seven Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

BIOS Settings:

IBM BIOS Changes

Performance Rating

3 streams YUV uncompressed

Slot Positions

AGP: Matrox G400
PCI 6: empty
PCI 5: empty
PCI 4: empty
PCI 3: empty
PCI 64 2: TARGA 3000
PCI 64 1: empty

Note: PCI 6 is next to AGP port

Technical Advisories

1. PCILOCK Boot Option

Specifications and Features

Architecture:
Form factor Mini tower (7x9)
Orientations allowed Vertical
Slots x bays total (free) 7(6) x 9(6)
Expansion bus type PCI

Processor:
Processor (CPU) Pentium III Xeon
Processor internal clock speed 866 MHz
Planar clock speed 133 MHz
SMP processors std 1
SMP processors max 2
Upgradable processor Yes
Math co-processor Built-In
L1 internal CPU cache 32 KB
Processor upgrade options SMP via second Pentium III
SMP capable (multiple processors) Yes
L2 cache std 256KB
L2 cache max 256KB
BIOS type Flash ROM

Memory :
Memory (RAM) std 256 MB
Memory (RAM) max3 1024 MB
RAM speed 600MHz
Optional RAM configuration:
RAM type PC 600 ECC RDRAM
RAM slots total 4 RIMM
RAM slots available 2 RIMM

Expansion options:
Slots total (free) and type 1(0) AGP fullsize, 6(6) PCI fullsize
3.5 inch bays - accessible (free) and height 1(0) SL
3.5 inch bays - not accessible (free) and height 6(5) SL
5.25 inch bays - accessible (free) and height 2(1) HH
5.25 inch bays - not accessible (free) and height 0(0)
Parallel ports (type) 1 (EPP/ECP bidirectional)
Serial ports (type) 2 (9-pin 16550 with RS232E), 2 (USB)
Expansion ports Display, Keyboard, Line in, Line out, Microphone in, Mouse, SCSI

4.2 IBM Intellistation Mpro model 6868-xxU

IBM Product Information

32-bit PCI solution from IBM.

Tested Configuration

- BIOS version PLKT 33.0 dated 05/18/00
- Model 6868-52U
- One Pentium III 866MHz "Coppermine" 133 MHz FSB
- 256 MB RDRAM 133 MHz
- Matrox Millenium G400 single or dual head 32MB display adapter
- Adaptec 29160 SCSI host adapter
+ check Seven Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

BIOS Settings:

Required BIOS Changes

Performance Rating

2 streams YUV uncompressed

Slot Positions

AGP: Matrox G400
PCI 1: empty
PCI 2: empty
PCI 3: TARGA 3000
PCI 4: empty
PCI 5: Adaptec SCSI host adapter

Technical Advisories

1. PCILOCK Boot Option

Specifications and Features

Architecture:
Form factor Mini tower (6x7)
Orientations allowed Vertical
Slots x bays total (free) 6(4) x 7(4)
Expansion bus type PCI

Processor:
Processor (CPU) Pentium III
Processor internal clock speed1 866 MHz
Planar clock speed 133 MHz
SMP processors std 1
SMP processors max 2
Upgradable processor No
Math co-processor Built-in
L1 internal CPU cache 128 KB
Processor upgrade options SMP via second Pentium III
SMP capable (multiple processors) Yes
L2 cache std 256KB
L2 cache max 256KB
BIOS type Flash ROM

Memory:
Memory (RAM) std 256 MB
Memory (RAM) max3 1024 MB
RAM speed 300MHz
RAM type PC 600 ECC RDRAM
RAM slots total 4 RIMM
RAM slots available 2 RIMM

Expansion options:
Slots total (free) and type 1(0) AGP fullsize, 5(4) PCI fullsize
3.5 inch bays - accessible (free) and height 2(1)
3.5 inch bays - not accessible (free) and height 3(2)
5.25 inch bays - accessible (free) and height 2(1)
5.25 inch bays - not accessible (free) and height 0(0)

4.3 IBM Intellistation Mpro model 6889-xxU

IBM Product Information

Intel 440BX 32-bit PCI solution from IBM. This is only available as an OEM solution.

Tested Configuration

- BIOS version NUKT 34.0
- Model 6889-91U
- One Pentium III 550MHz 100 MHz FSB
- 256 MB SDRAM PC100 MHz
- Matrox Millenium G400 single or dual head 32MB display adapter
- Adaptec 29160 SCSI host adapter
+ check Seven Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

BIOS Settings:

Required BIOS Changes

Performance Rating

2 streams YUV uncompressed

Slot Positions

AGP: Matrox G400
PCI 1: empty
PCI 2: Adaptec SCSI host adapter
PCI 3: empty
PCI 4: TARGA 3000
PCI 5: empty
ISA 1: empty

Technical Advisories

1. PCILOCK Boot Option

2. PCI slot 1 is designed for an Adaptec RAID controller, and will not accomodate TARGA 3000 or 64-bit SCSI host adapter boards.

3. Do not install TARGA 3000 or Adaptec SCSI adapter in PCI slot 3. Data transfer performance is sub-optimal.

Specifications and Features

. Intel Pentium II or Pentium III (550MHz 100MHz FSB maximum) microprocessor with MMX technology
. Support for up to 1024 MB (1 GB) of system memory (SDRAM)
. 512 KB L2 cache memory integrated into microprocessor
. PCI, ISA, and AGP buses
. Busmaster Ultra DMA-33 IDE controller
. Integrated Adaptec AIC-7895 Dual Channel Ultra Wide SCSI PCI controller
. EIDE or Ultra Wide SCSI hard disk drive
. 32X or 40X Max IDE CD-ROM drive 1
. 3.5-inch, 1.44 MB diskette drive

. Expansion
- Six drive bays (three of which are occupied by the preinstalled diskette drive, hard disk, and CD-ROM drives)
- Six expansion slots (four dedicated PCI, one shared ISA/PCI, and one dedicated AGP). One of these slots is occupied by the preinstalled graphics adapter
- Second microprocessor socket
- Four memory sockets (one or more of which can be occupied by preinstalled memory)
- Support for additional internal and external SCSI devices (the number of internal devices that can be installed is limited by the number of available drive bays and power and cooling requirements)
- Support for optional Adaptec ARO-1130 PCI RAIDport adapter

4.4 Required BIOS Changes for IBM Intellistation:

MPro model 6889-xxU
MPro model 6868-xxU
ZPro model 6866-xxU

Scope: This document outlines the required changes to system BIOS to allow TARGA 3000 rev. 1.X to operate properly. If necessary, consult IBM Intellistation system documentation for more information.

1. Boot system. At the IBM logo screen, press [F1] to enter setup. If the system boots to NT, shutdown and power cycle to repeat. This option cannot be reached by restarting via software or the operating system. Use right or left cursor keys to change settings.
2. Select "Devices and I/O ports".
   Select "SCSI setup".
   Set to "enabled".
   Press [Esc]. Press [Esc].
3. Select "Start options".
   Select "Startup sequence".
   Set first startup device to "diskette drive 0".
   Set second startup device to "CD-ROM".
   Set third startup device to "hard disk 0".
   Set fourth startup device to "disabled".
   Set automatic power on startup sequence to "disabled".
   Set error startup sequence to "disabled".
   Press [Esc]. Press [Esc].
4. Select " Advanced Setup".
   Select "PCI Control".
   Set PCI Parity to "Disabled".
   Press [ESC]. Press [ESC]
5. Select "Power management".
   Select "APM".
   Set APM BIOS mode to "disabled".
   Set Automatic hardware power management to disabled.
   Press [Esc].
6. Select "Automatic power on".
   Select "Wake on LAN".
   Set Wake on LAN to "disabled".
   Press [Esc].
7. Set Serial Port A ring detect to "disabled".
   Set Modem ring detect to "disabled".
   Set Wake up on alarm to "disabled".
   Set PCI wake up to "disabled".
   Press [Esc]. Press [Esc].

Changes are now complete. Exit and restart system.

4.5 Compaq SP750 Professional Workstation

Compaq Product Information

Compaq's top workstation, based on dual Pentium Xeon and i840 chipset (64-bit PCI) technology

Tested Configuration

- BIOS version 02.13
- Two Pentium III Xeon 866MHz "Coppermine" 133 MHz FSB
- 512 MB RDRAM 133 MHz
- Matrox Millenium G400 Single and Dual Head 32MB display adapter
+ [also tested with 3DLabs Oxygen GVX1 display adapter]
+ Adaptec 29160 or 39160 SCSI host adapter BIOS v2.55.0
+ 7 Quantum Atlas 10K 9WLS Ultra160m 9 GB

Performance Rating

3 streams YUV uncompressed

Slot Positions

AGP: Matrox G400 or 3DLabs GVX1
PCI 1: empty
PCI 2: empty
PCI 3: empty
PCI 4: empty
PCI 64 1: TARGA 3000
PCI 64 2: SCSI host adapter

Technical Advisories

1. Apply system BIOS version 02.13. TARGA will not operate correctly without this version.

2. Disable Power Management in BIOS.

3. PCILOCK Boot Option

4. For optimal performance, connect the external AV disk array to an additional Adaptec 29160 or 39160 Ultra160m SCSI host adapter installed in PCI 64 slot 2, with TARGA 3000 in PCI 64 slot 1. Compaq's onboard Ultra160m SCSI controller may be used for the AV disk array, but TARGA must then be installed in a 32-bit PCI slot (slots 1-4), and doing so will decrease TARGA's overall playback performance to the next lowest level

The TARGA will not operate properly if installed in a 64-bit PCI slot (PCI 64 slots 1 or 2) in combination with an AV array connected via Compaq's onboard Ultra160m SCSI controller. These two devices are on different 64-bit PCI busses, and may not allow maximum datarate transfers.

Disable BIOS on the SCSI adapter to allow the SP750 to start properly. The desired setting would disable BIOS, but retain the scan-on-boot function. Consult the adapter's documentation for instructions.

Specifications and Features

- Minitower form factor for increased expandability (rackmount option)
- Support for two Intel Pentium(r) III Xeon(tm) processors up to 866MHz
- Full-featured Intel 840 chipset with 133-MHz front side bus, dual memory channels, dual-peer PCI buses, and 64-bit PCI
- 256-KB full-speed L2 cache integrated on processor
- 128 or 256 MB of 800-MHz ECC RDRAM(r). Expandable to 2GB (4 GB when 288-Mb technology becomes available)
- High-performance 9.1 or 18.2-GB Ultra3 SCSI 10,000 rpm Hard Drive
- Integrated dual channel Ultra3 SCSI and Ultra ATA/66
- Up to 144 GB of high-performance internal storage
- Integrated Intel PRO/100+ Management Adapter
- Seven total slots (six available, two 64-bit/66-MHz PCI, four 32-bit/33-MHz PCI, one AGP Pro 4X)
- Seven bays (four available)
- 40X Max1 CD-ROM Drive and Compaq Premier Sound(tm) Audio
- Choice of 3DLabs Oxygen GVX1, ELSA GLoria II, ELSA Synergy II, Matrox Millennium G400, Intense3D Wildcat 4110 PRO, Matrox G200 Quad MMS, or Matrox Productiva G100 graphics controllers
- Multiple monitor support (select graphics controllers)
- Rack-mountable via optional conversion kit
- Protected by Compaq Services, including a three-year, limited warranty

4.6 Dell Precision Workstation 620

Dell Product Information

Tested Configuration

BIOS revision and date - Phoenix ROM BIOS PLUS version 1.10 AO7
OS and service pack info. - Windows 2000 and Windows NT 4.0 w/ sp6
Processor count and speed - Dual 1 GHz. Intel Xeon
Memory type and amount - RDRAM, 1GB 2- 512MB RIMM modules
Display adapter - Nvidia GeForce2 GTS 32MB DDR AGP adapter
System drive subsystem - integrated dual-channel Adaptec 7899 Ultra160/M LVD SCSI controller with a Seagate ST31845LW Ulta160 wide SCSI 15K Cheetah hard drive.
Video drive subsystem - Qlogic QLA12160 Dual Channel Ultra3 SCSI adapter with eight Quantum Atlas 10k Ultra160/m SCSI drives
Slot placement of plug-in peripherals - TARGA 3000 in PCI slot 5, Qlogic SCSI adapter in PCI slot 4
BIOS settings - Default factory settings

Performance rating

3 stream YUV

Technical Advisories

1. PCILOCK Boot Option

2. Installation notes - If the NIC is installed and configured prior to TARGA3K installation, the TARGA3K installation will cause the BIOS to remap the NIC to a different PCI bus. This remapping causes the NIC driver to fail since it can no longer find the adapter at the PCI address it expects. Reinstallation of the NIC driver software will resolve this remapping issue.

Specifications

Chipset - Intel 840
Bus frequency - 133 FSB
Form factor - ATX
Power supply - 410W
PCI/AGP slot count and type - one AGP 4X Pro, two 64bit/66MHz. PCI, three 32bit/33MHz. PCI with one slot being a combination 32bit 33MHz. PCI/RAIDPort slot
Integrated peripherals - Audio : Crystal 4164 PCI audio controller and 4297 codec,
I/O interface: two 9-pin serial connectors; 16550-compatible, 25-pin parallel connector (bi-directional), 68-pin Ultra/Wide SCSI connector, 15-pin Video DIN connector(s) (on optional graphics adapters), 6-pin mini-DIN keyboard connector, 6-pin mini-DIN mouse connector, RJ45 NIC connector, two USB-compliant 4-pin connectors, 1/8-inch Audio line-in miniature audio jack, 1/8-inch Audio line-out miniature audio jack, and 1/8-inch Audio microphone-in miniature audio jack.
Network interface - integrated 3COM 3C590 fast ethernet controller

4.7 HP Kayak XU800 Workstation

HP product information

Tested Configuration

BIOS revision and date - AMI BIOS version IA.11.03US 08/31/99
OS and service pack info. - Windows NT 4.0 w/ sp6
Processor count and speed - Single 533Mhz. Intel Pentium III
Memory type and amount - ECC RDRAM, 128MB 2-64MB RIMM Modules
Display adapter - Matrox G400 16MB Dual-Head AGP adapter
System drive subsystem - Integrated Intel Ultra-66 ATA controller with a 15GB Seagate ST315322A ATA-66 hard drive
Video drive subsystem - Adaptec 39160 Dual channel Ultra160/M LVD SCSI adapter with eight Quantum Atlas 10k Ultra160/m SCSI drives
Slot placement of plug-in PCI peripherals - Adaptec 39160 in PCI slot 3(64-bit), TARGA 3000 in PCI slot 4(64-bit) and HP NIC in PCI slot 5(32-bit)
BIOS settings - Default factory settings with power management turned off

Technical Advisories

1. PCILOCK Boot Option

2. Installation notes - Internal Ultra 160/m controller is on the 64-bit PCI bus but HP offers support for only two internal 10K rpm Ultra 160/m drives

Specifications

Chipset - Intel 840
CPU configuration - dual processor SECC2
Bus frequency - 133MHz. FSB
Form factor - Extended ATX
Power supply - 300W
PCI/AGP slot count and type - one AGP Pro 4X 50W, two 64bit/66MHz. PCI and three 32bit/33MHz. PCI
Additional integrated peripherals - Adaptec AIC-7892 Ultra 160/M SCSI controller, Digital 16-bit stereo audio with MPC-3 and Direct Sound III support(CSA4280 and CS4297 audio chipset)
I/O interface - One 25-pin parallel port (ECP bi-directional Centronics supporting IEEE 1284), Two 9-pin serial ports (16550 UART), Mini-DIN keyboard and mouse ports, One MIDI/joystick connector, Audio ports (line-in, line-out, microphone-in, speaker-out), One VESA feature connector for VGA pass-through, One 15-pin VGA connector (two on models with Matrox Millennium G400 Dual graphics), Two stacked Universal Serial Bus (USB) ports and One RJ-45 Ethernet connector
network interface - HP EN1207-TX PCI-based 10/100 base-T Ethernet controller

4.8 Silicon Graphics 550 Workstation

SGI Product Information

Tested Configuration

BIOS revision and date - System BIOS version 4.0, SMBIOS 2.3 (not yet released)
OS and service pack info. - Windows NT 4.0 SP6
Processor count and speed - Dual 733MHz. Xeon
Memory type and amount - RDRAM, 256MB 2-128RIMM modules
Display adapter - Nvidia/SGI Vpro OpenGL adapter (NV10 64MB Quadro)
System drive subsystem - integrated dual-channel Adaptec 7899 Ultra160/M LVD SCSI controller with a Seagate ST318436LW Ulta2 LVD SCSI Barracuda hard drive.
Video drive subsystem - Atto UL2D dual channel Ultra2 LVD SCSI adapter with eight Quantum Atlas 10k Ultra160/m SCSI drives
BIOS settings - Default factory settings with power management turned off

Technical Advisories

1. PCILOCK Boot Option

2. Installation notes - If the NIC is installed and configured prior to TARGA3K installation, the TARGA3K installation will cause the BIOS to remap the NIC to a different PCI bus. This remapping causes the NIC driver to fail since it can no longer find the adapter at the PCI address it expects. Reinstallation of the NIC driver software will resolve this remapping issue.

Specification

Chipset - Intel 840
Bus frequency - 133 FSB
Form factor - ATX
Power supply - 450W
PCI/AGP slot count and type - one AGP 4X Pro, two 64bit/33MHz. PCI and three 32bit/33MHz. PCI
integrated peripherals
audio: Analog Devices AD1881 chip
I/O interface
Two 9-pin serial ports (16550 UART)
One 25-pin parallel port
Two Universal Serial Bus (USB) ports
One PS/2 mouse port
One PS/2 keyboard port
network interface - integrated Intel 82559 fast ethernet controller

4.9 HP Workstation X4000

HP Workstation X4000	HP Workstation X4000 Homepage
PERFORMANCE RATING: 3 streams YUV	
TESTED CONFIGURATION: +2 x 1.7GHz Intel Xeon Processors +1 GB PC800 RDRAM Rambus Memory +Integrated LSI Logic 53C1010 Dual Channel SCSI 160 Controller +Nvidia Quadro 2 Pro AGP video adapter with 64MB +Adaptec AHA-39160 Dual Channel SCSI160 Controller with firmware number 2.57.2 +8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives	
SLOT ASSIGNMENTS: **AGP:** NVIDIA Quadro 2 Pro **PCI32-1:** Empty **PCI32-2:** Empty **PCI32-3:** Empty **PCI64-1:** Targa 3000 (Rev. D) **PCI64-2:** AHA 39160	**FEATURES AND SPECIFICATIONS:** **Form Factor:** Extended ATX footprint (13" x 12") **Supported Processors:** Supports dual/single Intel® XeonTM(Socket 603) processor 400 MHz Front Side Bus **Memory Type:** PC800 Rambus RDRAM Memory Expandable to 4GB **Chipset:** Intel® 860 chipset 82860 North Bridge, 82801BA I/O Controller Hub, 82802AB Firmware Hub and 82806AA PCI 64 Hub **I/O Expansion Slots:** 1 AGP 4X 3 PCI 32 Bit Slots 2 PCI 64 Bit Slots **Integrated Devices:** Integrated 10/100 ethernet controller Integrated dual channel ATA 100 IDE controller Integrated dual channel LSI Logic 53C1010 SCSI 160 controller Integrated AC'97 Audio Codec
CONFIGURATION NOTES: 1. Busmaster must be enabled in all PCI Slots (by default, HP has busmaster disabled in all PCI slots.) Please consult the user manual on how to enable busmaster in the BIOS. 2. Targa 3000 (model 3105) is tested and passed.	

PINNACLE SYSTEMS

4.10 Compaq Evo Workstation W8000

COMPAQ EVO W8000

PERFORMANCE RATING: 3 streams YUV

TESTED CONFIGURATION:

BIOS revision and date - Compaq System ROM v01.05
OS and service pack info. - Windows2000 Professional w/ sp1
BIOS settings – As shipped
1 x Pentium Xeon 1.7GHz
2 x 256MB ECC PC800 RDRAM
1 x Integrated AIC-7899 dual channel U160 SCSI controller
1 x Adaptec AHA-39160
1 x Nvidia Quadro 2 Pro AGP adapter
1 x Seagate 18GB U160 ST318451LW System drive
8 x Quantum Atlas 10K U160 Video Arrray

Certification Testing - tested with CODI 2.0B4 release and Targa 3000 1.5/Premiere 6
CODI testing - ran all CODI examples
Targa testing - ran a 1 Hour 33 minute project to ~167,000 frames
Project1 consists of three YUV uncompressed streams (one full screen w/ two overlayed PIPs) with five graphic layers (Title Deko generated titles)
DV25 testing (capture and playback)
MPEG I-Frame (capture and playback)
Boards used for testing included the following:
CODI - TARGA3101 and TARGA3210
Targa 3000 v1.5 - TARGA3100

SLOT ASSIGNMENTS:

AGP: NVIDIA Quadro 2 Pro
PCI32-1: Empty
PCI32-2: Empty
PCI32-3: Empty
PCI32-4: Empty
PCI64-1: Targa 3000 (Rev. D)
PCI64-2: AHA 39160

CONFIGURATION NOTES:

The internal AIC-7899 dual channel ultra160 SCSI3 controller was not used for video-data storage in this testing due to it being attached to the 32-bit PCI bus. With the TARGA3000 in a 64-bit PCI slot, the available video-data bandwidth would be severely limited by this data having to go through a PCI bridge before reaching the ultra160 SCSI3 controller on the 32-bit PCI bus.
In order to pass the 90-minute Adobe Premiere playback portion of the certification process without any dropped frames, the following services should be disabled in the "Services" control panel:
1. Altiris Client Service
2. Compaq DMI Web Alerter
3. Compaq Local Alerter
4. Compaq Remote Diagnostics Enabling Agent
5. Insight Manager LC Remote Management

With these services enabled, Our 90-minute playback test was consistently dropping 4 - 7 frames.

EVO W8000 Homepage

FEATURES AND SPECIFICATIONS:

Supported Processors:
Supports dual/single Intel® XeonTM(Socket 603) processor
400 MHz Front Side Bus

Memory Type:
PC800 Rambus RDRAM Memory Expandable to 4GB

Chipset:
Intel® 860 chipset
82860 North Bridge,
82801BA I/O Controller Hub,
82802AB Firmware Hub
and 82806AA PCI 64 Hub

I/O Expansion Slots:
1 x AGP Pro 4x
2 x 64-bit/66-MHz PCI
4 x 32-bit/33-MHz PCI

Integrated Devices:
Integrated Intel PRO/100+ Management Adapter
Integrated dual channel ATA 100 IDE controller
Integrated dual channel 160 controller
Integrated SoundBlaster 128 Audio

PINNACLE SYSTEMS

4.11 Dell Precision 530

Dell Precision 530	Dell Precision 530 Homepage
PERFORMANCE RATING: 3 streams YUV	
TESTED CONFIGURATION: +2 x 1.7GHz Intel Xeon Processors +512 GB PC800 RDRAM Rambus Memory +Integrated Adaptec Single Channel SCSI 160 controller +Nvidia Quadro 2 Pro AGP video adapter with 64MB +Adaptec AHA-39160 Dual Channel SCSI 160 Controller with firmware number 2.57.2 +8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives	 **FEATURES AND SPECIFICATIONS:** **Form Factor:** ATX with 460W power supply **Supported Processors:** Supports dual/single Intel® XeonTM(Socket 603) processor 400 MHz Front Side Bus **Memory Type:** PC800 Rambus RDRAM Memory Expandable to 4GB **Chipset:** Intel® 860 chipset 82860 North Bridge, 82801BA I/O Controller Hub, 82802AB Firmware Hub and 82806AA PCI 64 Hub **I/O Expansion Slots:** 1 4X AGP Pro110 slot 3 PCI 32 Bit Slots 2 PCI 64 Bit Slots **Integrated Devices:** Integrated 3Com® 3C920v3 Fast EtherLink XL 10/100 ethernet controller Integrated dual channel ATA 100 IDE controller Integrated Adaptec Single Channel SCSI 160 controller Integrated AC'97 Audio Codec Integrated IEEE1394 Interface
SLOT ASSIGNMENTS: **AGP:** NVIDIA Quadro 2 Pro **PCI32-1:** Empty **PCI32-2:** Empty **PCI32-3:** Empty **PCI64-1:** Targa 3000 (model 3105) **PCI64-2:** AHA 39160	
CONFIGURATION NOTES: Onboard IEEE 1394 can be used in conjunction with Rev. D or earlier T3K hardware for OHCI support. IEEE1394 hardware is compatible with T3K OHCI patch. **UPDATED 6/02/2002:** Must use A06 BIOS update, which can be downloaded from www.dell.com	

4.12 IBM Intellistation MPro 6850

IBM Intellistation M-Pro 6850

[Intellistation M-Pro 6850 Homepage]

PERFORMANCE RATING: 3 streams YUV

TESTED CONFIGURATION:
+2 x 2.0 GHz Intel Xeon Processors
+1 GB PC800 RDRAM Rambus Memory
+Integrated Adaptec dual channel SCSI 160 Controller
+Matrox G450 AGP 32MB Dual Head Display
+Medea Raid RTR 160 Disk Array
+StoreCase Info Station Disk Array

FEATURES AND SPECIFICATIONS:

Form Factor:
Extended ATX footprint (13" x 12")
Supported Processors:
Supports dual/single Intel® XeonTM(Socket 603) processor
400 MHz Front Side Bus
Memory Type:
PC800 Rambus RDRAM Memory Expandable to 4GB
Chipset:
Intel® 860 chipset
82860 North Bridge,
82801BA I/O Controller Hub,
82802AB Firmware Hub
and 82806AA PCI 64 Hub
I/O Expansion Slots:
1 AGP 4X
3 PCI 32 Bit Slots
2 PCI 64 Bit Slots
Integrated Devices:
Integrated 10/100 ethernet controller
Integrated dual channel ATA 100 IDE controller
Integrated dual channel Adaptec U160 SCSI controller
Integrated AC'97 Audio Codec

SLOT ASSIGNMENTS:

AGP: Matrox G450
PCI32-1: Empty
PCI32-2: Empty
PCI32-3: Empty
PCI64-1: Targa 3000 (Rev. D)
PCI64-2: Empty

CONFIGURATION NOTES:

1. Tested BIOS Rev. DAE133A
2. There have been reported problems with COM port not functional when using Discreet Edit with T3K. Engineering is investigating this issue.
3. Highly recommend reinstalling Intel's INF installer for fully functional system.

PINNACLE SYSTEMS

5 Certified Motherboards

5.1 Intel SE440BX-2 "Seattle" Motherboard

Seattle Product Site

Note: Intel 440BX chipset 32-bit PCI solution

Tested Configuration

- BIOS version 4S4EB2X0.86A.0023.P16
- Board version N/A
+ One Pentium III 550MHz 100 Mhz FSB
+ 256 MB PC-100 SDRAM
+ ATI Rage 128 Pro PCI 16MB display adapter
+ Adaptec 29160 SCSI host adapter BIOS v2.55.0
+ 3Com905C-TX network interface card
+ Seven Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

BIOS Settings

From Setup defaults, disable Power Management.

Performance Rating

2 streams YUV uncompressed

Slot Positions

AGP: ATI or Matrox display adapter
PCI 1: empty
PCI 2: TARGA 3000
PCI 3: SCSI adapter
PCI 4: 3Com905 NIC
ISA 1: empty
ISA 2: empty

Technical Advisories

1. PCILOCK Boot Option

Specifications and Features

The SE440BX-2 motherboard has the following features:

- ATX form factor of 12 x 7.75 inches

Microprocessor
- Single Pentium(r) III processor, - Pentium(r) II processor or Intel(r) - Celeron(tm) processor
- 66 MHz and 100 MHz host bus speeds
- Integrated 512 KB second-level cache on the Pentium III processor and Pentium II processor
- Integrated 128 KB second-level cache on the Intel Celeron processors 300A MHz, 333 MHz, 366 MHz, 400 MHz, and 433 MHz
- 242-contact slot connector

Main Memory
- Three 168-pin dual inline memory module (DIMM) sockets
- Supports up to 768 MB of synchronous DRAM (SDRAM)
- Supports error checking and correcting (ECC)

Intel 82440BX AGPset and PCI/IDE Interface
- Intel 82443BX PCI/AGP controller (PAC)
-- Integrated PCI bus mastering controller
-- Integrated Accelerated Graphics Port (AGP) controller
- Intel 82371EB PCI ISA IDE Xcelerator (PIIX4E)
-- Multifunction PCI-to-ISA bridge
-- Universal Serial Bus (USB) and DMA controllers
-- Two fast IDE interfaces, that support up to four IDE drives or devices
Power management logic
-- Real-time clock

Five Expansion Slots
- One ISA slot
- Three 32-bit PCI slots
- One shared PCI/ISA slot

5.2 Supermicro P6DBE 440BX motherboard

Supermicro P6DBE site

Tested Configuration

- BIOS version 4060 release 3.0
- Board version 3.0
+ Two Pentium III 550MHz 100 Mhz FSB
+ 256 MB PC-100 SDRAM
+ ATI Rage 128 Pro AGP 32MB display adapter
+ (also tested with Matrox G400 16MB single head display adapter)
+ Adaptec 29160 SCSI host adapter BIOS v2.55.0
+ 3Com905C-TX 10/100 network interface card
+ Creative Labs Sound Blaster PCI128 sound card
+ Seven Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

BIOS Settings:

Optimal settings with the following changes:
Power Management Mode: Disabled

Performance Rating

2 streams YUV uncompressed

Slot Positions

Note: Slot closest to AGP is PCI 5

AGP: display adapter (ATI or Matrox)
PCI 5: empty
PCI 4: TARGA 3000
PCI 3: Adaptec SCSI
PCI 2: 3Com905C-TX
PCI 1: Sound Blaster PCI128
ISA 1: empty
ISA 2: empty

Technical Advisories

1. PCILOCK Boot Option

Specifications and Features

The SUPER P6DBE, running at a bus speed of 100 MHz, supports dual Pentium III/II 233 ~ 700 MHz processors. The P6DBE is based on Intel's 440BX chipset, which enables AGP, 100 MHz SDRAM, concurrent PCI, Ultra DMA with a 33 MB/s burst data transfer rate and Wake-on-Lan.

The SUPER P6DBE (board rev 2.x, 3.x) comes with 5 PCI and 2 ISA slots and an AGP connector. AGP reduces contention between the CPU and I/O devices by broadening the bandwidth of graphics to memory. It delivers a maximum 532 MB/s 2x transfer mode, which is quadruple the PCI speed.

5.3 Supermicro S370DL3

Supermicro S370DL3 site

Tested Configuration

+ Two Pentium III 733MHz 133 Mhz FSB
+ 512 MB PC-133 Registered ECC PC-133 SDRAM
+ ATI Rage 128 Pro PCI 16MB display adapter
+ Adaptec 29160 SCSI host adapter BIOS v2.55.0
+ Adaptec 39160 Dual Channel SCSI host adapter
+Qlogic Dual Channel SCSI QLA12160 Host Adapter
+IWILL DU3160 Dual Channel SCSI Host Adapter (Dual Channel external connection requires an additional internal to external adapter cable.)
+ Integrated Intel 82559 Network Controller
+ 8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

Performance Rating

3 streams YUV uncompressed

Slot Positions

Note: Slot closest to AGP is PCI 5

PCI 64-2: Targa 3000
PCI 64-1: AHA-39160
PCI 32-4: Empty
PCI 32-3: Empty
PCI 32-2: ATI Rage Pro 128 PCI
PCI 32-1: Empty
ISA 1 : Empty

Technical Advisories

1. PCILOCK Boot Option

2. Since this workstation uses the serverworks chipset, only PCI VGA adapters can be used, not AGP

Specifications and Features

Form Factor - ATX with PC99 color-coded double-deck I/O- Size: 12" x 10.25" (W x H)
Processor Support - Dual or single Intel 370-pin Pentium III FCPGA 600-933 MHz processors
Chipset - ServerWorks ServerSet III LE Chipset.
Front Side Bus (FSB) 133 /100 MHz
Memory - Four 3.3 volt, 168-pin registered DIMM sockets (PC100 or PC133). Up to 4 GB registered ECC DIMMs
Note: Supports only registered ECC memory. Non-ECC or unbuffered SDRAM not supported.
I/O Expansion Slots
Two 64-bit, 66/33 MHz PCI bus mastering slots
Four 32-bit PCI bus mastering slots at 33 MHz
One 16-bit ISA slot
Onboard Devices
Onboard Intel 82559 Ethernet controller
Onboard Adaptec AIC-7892 single channel Ultra3/160 SCSI controller Two Ultra DMA (UDMA/33) bus master/EIDE channels support data transfer rates of up to 33 MB/sec Dual USB (Universal Serial Bus) ports PS/2 keyboard and PS/2 mouse connectors
Two 16550 UART compatible serial ports
One ECP/EPP parallel port
One floppy port
Other Features
One WOL (Wake-On-LAN) connector
One chassis intrusion connector

Chassis Compatibility
Extended ATX chassis
Fits Super Micro SC750-A, SC760, and SC830chassis

5.4 Tyan S1867 Thunder 2500

http://www.tyan.com

Tested Configuration

- BIOS version dated 04/14/00
- Board version 2.1 Ultra2 SCSI (version 2.2, with optional Ultra160m SCSI was not tested)
+ Two Pentium III 667MHz "Coppermine" 133 Mhz FSB
+ 512 MB PC-133 SDRAM
+ ATI Rage 128 Pro PCI 16MB display adapter
+ Adaptec 29160 SCSI host adapter BIOS v2.55.0
+ Seven Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

BIOS Settings:

Setup Values with the following changes:
Power Management is disabled

Performance Rating

3 streams YUV uncompressed

Slot Positions

AGP: empty (see TA note 2)
PCI 1: ATI Rage 128 Pro PCI
PCI 2: Adaptec 29160 SCSI
PCI 3: TARGA 3000
PCI 4: TARGA alternative
PCI 5: SCSI alternative
PCI 6: empty
ISA 1: empty

Technical Advisories

1. Consult Certified Memory Vendors for specific memory chips that have passed Tyan Engineering tests. Note: Silicon Tech memory can be obtained by contacting Simple Technology, Inc.

2. DMA between PCI and AGP is unresolved on this board. A PCI graphics adapter is required.

3. Install both SCSI host adapter and TARGA in either +3.3V or +5.0V slots. Operating across these two busses will severely impact performance. PCI slots 1,2,3 and 6 are 64-bit 5.0V 33MHz slots. Slots 4 and 5 are 64-bit 3.3V 66MHz PCI slots.

4. PCILOCK Boot Option

Motherboard Specifications and Features

Processor Information
· Dual Intel Slot 1
· Pentium III 450 - 933 MHz
· Two on-board VRMs (VRM 8.4 spec)
· Front Side Bus Support for 100 / 133 Mhz

Expansion Slots
· One 2x / Pro AGP slot
· Four 64-bit/33 MHz PCI slots (5V Only)
· Two 64-bit/66 MHz PCI slots
· One 16-bit ISA slot (shared w/ one PCI)
· One shared, seven usable slots

Chipset Information
· ServerWorks ServerSet III HE 4-chip solution
· SMC 37B787 Super I/O chipset

Main Memory
· Eight 168-pin Registered DIMM sockets
· Up to 8.0 GB PC100 / PC133 compliant Registered SDRAM
· Supports ECC (72bit) memory modules
(Important: see Tyan's Recommended RAM list. This board is truly selective.)

BIOS Information
· Phoenix BIOS on 2Mb Flash

Disk Drive & System I/O
· Two PCI bus mastering EIDE channels
· Supports EIDE CD-ROMs
· PIO Mode 3 & 4 (up to 16.6 MB/sec DTR)
· UltraDMA mastering mode support

Physical Dimensions
· Extended ATX footprint (12w x 13l.)
· Eight layer board
· Two 20-pin ATX power connectors
· Stacked Mouse/Keyboard ports
· Stacked (2) USB/RJ-45 with LED ports
· Stacked Line-In/Line-Out/Mic-In/MIDI ports

5.5 IWILL DCA200N

IWILL DCA 200N site

Tested Configuration

- BIOS version 715
- Board version 1.4
+ Two Pentium III Xeon 733 133 Mhz FSB
+ 256 MB RIMM Rambus Memory
+ Matrox G400 16MB single head display adapter)
+ Adaptec 39160 SCSI host adapter BIOS v2.55.0
+Qlogic Dual Channel SCSI QLA12160 Host Adapter
+IWILL DU3160 Dual Channel SCSI Host Adapter (Dual Channel external connection requires an additional internal to external adapter cable.)
+ Integrated Intel 82559 Network Controller
+Integrated AC'97 Audio CODEC
+ 8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives
BIOS Settings: Please make sure that MPS 1.1 is used in advanced BIOS setup menu.

Performance Rating

3 streams YUV uncompressed

Slot Positions

Note: T3K is tested to work with either 64 bit PCI Slots.

AGP: display adapter (ATI or Matrox)
PCI 32-4: empty
PCI 32-3: empty
PCI 32-2: empty
PCI 32-1: empty
PCI 64-2: AHA-39160
PCI 64-1: Targa 3000

Technical Advisories

1. PCILOCK Boot Option
2. There were reports of Targa 1394 port not functional in Windows 2000. Please have your TARGA card modified for OHCI driver support or use an OHCI compliant car like the DV Studio to take advantage of 1394.

Specifications and Features

Performance of DCA200 supporting dual 800 MHz Intel(R) Pentium(TM) III Xeon(TM) processors
Chipset - Intel(R) 840 AGPset, Supports 133MHz / 100MHz FSB
Windbond(R) 83627-HF I/O set
Bus Frequency- "Bye-Bye Jumper(TM)", Iwill Smart Setting. Supports 133/100MHz FSB
System Memory
4 x RIMM Sockets Support up to 2GB of RDRAM Modules
Supports 64/128/256/512 MB RDRAM Module
Supports ECC Type and SPD RIMM Module
On Board IDE
Dual Ultra DMA 33/66 IDE Ports
Supports ATAPI IDE CD-ROM, ZIP-100 & LS-120
Expansion Slots
1 x AGP Pro Slot supports AGP Pro 50 and AGP 4X
2 x 64bit/66MHz PCI 2.2 Bus Master Slots
4 x 32bit/33MHz PCI 2.2 Bus Master Slots
BIOS
4MB PLCC FWH(Firmware Hub) with Flash
Board Size
WTX Form Factor - 360mm x 290mm,6 layers

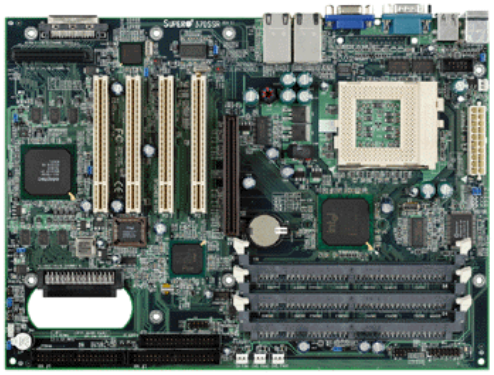
5.6 SUPERMICRO 370SSR

SUPERMICRO 370SSR

370SSR HOMPAGE

PERFORMANCE RATING:
2 streams YUV uncompressed

TESTED CONFIGURATION:
+Pentium III 933MHz 133 Mhz FSB
+256 MB PC133 SDRAM
+Matrox G400 32MB AGP VGA
+Adaptec 29160 SCSI host adapter BIOS v2.55.0
+Adaptec 39160 Dual Channel SCSI host adapter
+Qlogic Dual Channel SCSI QLA12160 Host Adapter
+IWILL DU3160 Dual Channel SCSI Host Adapter(Dual Channel external connection requires an additional internal to external adapter cable.)
+Integrated Intel 82559 Network Controller
+8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives



SLOT ASSIGNMENTS:

AGP : Matrox G400 AGP VGA
PCI32-4: Empty
PCI32-3: Empty
PCI32-2: TARGA 3000
PCI32-1: Empty

Note: PCI32-4 is closest to AGP slot

CONFIGURATION NOTES:

Use PCILOCK function if running Windows NT 4.0.

Do not use onboard VGA controller for video. Please use a certified VGA adapter for best performance.

FEATURES AND SPECIFICATIONS:

Form Factor:
ATX with PC99 color-coded double-deck I/O ports
Size: 12" x 8.7" (W x H)
Supported Processors:
Intel 370-pin Pentium ® III FCPGA 1 GHz - 600 MHz processor
Intel® 370-pin Celeron™ FCPGA/PPGA 800 – 333 MHz processor
Memory Type:
Three 3.3 volt, 168-pin DIMMs (25-degree sockets)
Up to 512 MB unbuffered SDRAM PC 133/100
Standby voltage to support STR (Suspend to RAM)
Chipset:
Intel ® 815e " Solano" chipset
(82815 GMCH + 82801BA ICH2)
I/O Expansion Slots:
One 4xAGP slot
Four 32-bit PCI bus mastering slots at 33 MHz with suspend voltage
Integrated Devices:
Adaptec® AIC-7899 Dual channel Ultra160 SCSI
Two Intel® 82559 Ethernet
Two Ultra DMA (UDMA/100) bus master/EIDE channels that support an IDE drive data transfer rate of 100 MHz
4 USB (Universal Serial Bus) ports (two onboard connectors and two headers)
PS/2 keyboard and PS/2 mouse connectors
Two fast UART 16550 compatible serial ports
One ECP/EPP parallel port
One floppy port
Direct AGP w/optional AIMM 4MB display cache
Chassis Compatibility:
Standard ATX chassis
Fits Super Micro's SC821, SC811

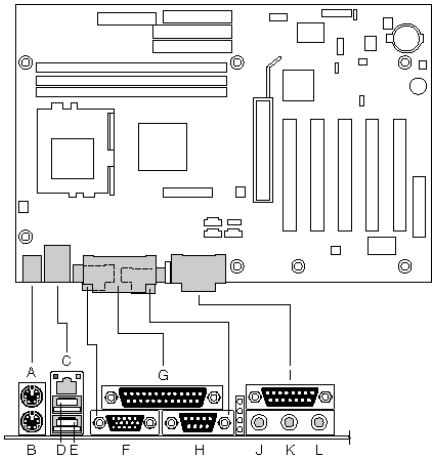
5.7 INTEL 815DEEA(L)

INTEL 815DEEA(L)

815DEEA(L) HOMEPAGE

PERFORMANCE RATING:
2 streams YUV uncompressed

TESTED CONFIGURATION:
+Pentium III 933MHz 133 Mhz FSB
+256 MB PC133 SDRAM
+ATI RAGE 128 32MB AGP VGA
+Adaptec 29160 SCSI host adapter BIOS v2.55.0
+Adaptec 39160 Dual Channel SCSI host adapter
+Qlogic Dual Channel SCSI QLA12160 Host Adapter
+IWILL DU3160 Dual Channel SCSI Host Adapter(Dual Channel external connection requires an additional internal to external adapter cable.)
+Integrated Intel 82559 Network Controller
+8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives



SLOT ASSIGNMENTS:

AGP : ATI Rage 128 AGP VGA
PCI32-5: Adaptec AHA-29160
PCI32-4: Empty
PCI32-3: Empty
PCI32-2: TARGA 3000
PCI32-1: Empty

Note: PCI32-5 is closest to AGP slot

CONFIGURATION NOTES:

Use PCILOCK function if running Windows NT 4.0.

Do not use onboard VGA controller for video. Please use a certified VGA adapter for best performance.

FEATURES AND SPECIFICATIONS:

Form Factor:
ATX with PC99 color-coded double-deck I/O ports
Size: 12" x 8.7" (W x H)
Supported Processors:
Intel 370-pin Pentium ® III FCPGA 1 GHz - 600 MHz processor
Intel® 370-pin Celeron™ FCPGA/PPGA 800 – 333 MHz processor
Memory Type:
Three 3.3 volt, 168-pin DIMMs (25-degree sockets)
Up to 512 MB unbuffered SDRAM PC 133/100
Standby voltage to support STR (Suspend to RAM)
Chipset:
Intel ® 815e " Solano" chipset
(82815 GMCH + 82801BA ICH2)
I/O Expansion Slots:
One 4xAGP slot
Five 32-bit PCI bus mastering slots at 33 MHz with suspend voltage
Integrated Devices:
Intel® 82559 Ethernet
Two Ultra DMA (UDMA/100) bus master/EIDE channels that support an IDE drive data transfer rate of 100 MHz
4 USB (Universal Serial Bus) ports (two onboard connectors and two headers)
PS/2 keyboard and PS/2 mouse connectors
Two fast UART 16550 compatible serial ports
One ECP/EPP parallel port
One floppy port
Direct AGP w/optional AIMM 4MB display cache
Chassis Compatibility:
Standard ATX chassis

5.8 INTEL D850GB

INTEL D850GB

D850GB HOMEPAGE

PERFORMANCE RATING:
2 streams YUV uncompressed

TESTED CONFIGURATION:
+Pentium 4 1.5 400 Mhz FSB
+512 MB PC800 RAMBUS RDRAM
+ATI RAGE 128 32MB AGP VGA
+Adaptec 29160 SCSI host adapter BIOS v2.55.0
+Adaptec 39160 Dual Channel SCSI host adapter
+Qlogic Dual Channel SCSI QLA12160 Host Adapter
+IWILL DU3160 Dual Channel SCSI Host Adapter(Dual Channel external connection requires an additional internal to external adapter cable.)
+Integrated Intel 82559 Network Controller
+8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

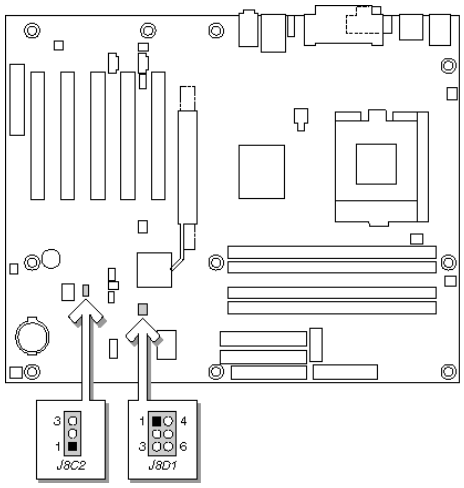
SLOT ASSIGNMENTS:

AGP : ATI Rage 128 AGP VGA
PCI32-5: Adaptec AHA-29160
PCI32-4: Empty
PCI32-3: Empty
PCI32-2: TARGA 3000
PCI32-1: Empty

Note: PCI32-5 is closest to AGP slot

CONFIGURATION NOTES:

Use PCILOCK function if running Windows NT 4.0.



FEATURES AND SPECIFICATIONS:

Form Factor:
ATX (12.0 inches by 9.6 inches)
Supported Processors:
Support for an Intel® Pentium® 4 423 Pin processor 400 MHz system data bus
Memory Type:
Two Direct-RDRAM channels with two RIMMs per channel (four RIMM sockets)
Support for up to 2 GB of system memory using PC600 or PC800 RDRAM
Chipset:
Intel® 850 Chipset, consisting of:
Intel® 82850 Memory Controller Hub (MCH)
Intel® 82801BA I/O Controller Hub (ICH2)
Intel® 82802AB 4 Mbit Firmware Hub (FWH)
I/O Expansion Slots:
One 4xAGP slot
Five PCI bus add-in card connectors (SMBus routed to PCI bus connector 2)
Integrated Devices:
Audio subsystem that uses the Analog Devices AD1881 analog codec for AC 97 processing
Intel® 82562EM 10/100 Mbit/sec Platform LAN Connect (PLC) device
Two Ultra DMA (UDMA/100) bus master/EIDE channels that support an IDE drive data transfer rate of 100 MHz
4 USB (Universal Serial Bus) ports (two onboard connectors and two headers)
PS/2 keyboard and PS/2 mouse connectors
Two fast UART 16550 compatible serial ports
One ECP/EPP parallel port
One floppy port
Chassis Compatibility:
Standard ATX chassis

PINNACLE SYSTEMS

5.9 SUPERMICRO PIIIDR3

SUPERMICRO PIIIDR3	PIIIDR3 HOMEPAGE

PERFORMANCE RATING:
3 streams YUV uncompressed

TESTED CONFIGURATION:
+Two Pentium III 733MHz 133 Mhz FSB
+512 MB PC800 RAMBUS RDRAM
+Matrox G400 32MB AGP VGA
+Adaptec 29160 SCSI host adapter BIOS v2.55.0
+Adaptec 39160 Dual Channel SCSI host adapter
+Qlogic Dual Channel SCSI QLA12160 Host Adapter
+IWILL DU3160 Dual Channel SCSI Host Adapter(Dual Channel external connection requires an additional internal to external adapter cable.)
+Integrated Intel 82559 Network Controller
+8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

SLOT ASSIGNMENTS:

AGP : Matrox G400 AGP VGA
PCI32-4: Empty
PCI32-3: Empty
PCI32-2: Empty
PCI32-1: Empty
PCI64-2: Adaptec AHA-29160
PCI64-1: TARGA 3000

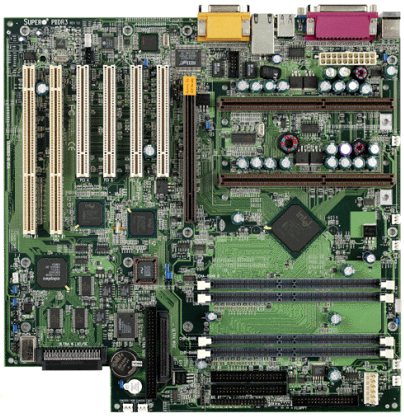
Note: PCI32-4 is closest to AGP slot

CONFIGURATION NOTES:

Use PCILOCK function if running Windows NT 4.0.

Use PC600 Memory when running with 100MHz FSB Processors

Use PC800 Memory when running with 133MHz FSB Processors.



FEATURES AND SPECIFICATIONS:

Form Factor:
ATX with PC99 color-coded double-deck I/O
Size: 12" (W) x 11.55" (H)
Supported Processors:
Dual or single Intel® Pentium® III 1 GHz ~ 350 MHz (Slot 1)
Dual or single Intel® Pentium® II 450 MHz ~ 350 MHz (Slot 1)
Memory Type:
Four 2.5 volt, 184-pin RIMM sockets
Standby voltage to support STR (Suspend to RAM)
Up to 2 GB RAMBUS RIMMs
Support ECC and non ECC
Chipset:
Intel® 840 Carmel Chipset
(82840 MCH + 82801AA ICH + 82806AA P64H)
I/O Expansion Slots:
One AGP Pro (4xAGP) slot supports data throughput of up to 1 GB/s
Two 64-bit, 66 MHz PCI bus mastering slots
(Includes one 64-bit PCI slot that supports SISL -- to be verified)
Four 32-bit PCI bus mastering slots at 33 MHz with suspend voltage
Integrated Devices:
Onboard Intel 82559 Ethernet controller
Onboard single channel Ultra3/160 SCSI controller
Two Ultra DMA (UDMA/66) bus master/EIDE channels support data transfer rates of up to 66 MB/sec
AC'97 2.1 compliant link for audio and telephony CODECs
Dual USB (Universal Serial Bus) ports
PS/2 keyboard and PS/2 mouse connectors
Two 16550 UART compatible serial ports
One ECP/EPP parallel port
One floppy port
Chassis Compatibility:
Full ATX chassis
Fits Super Micro SC860, SC850, SC840, SC830 SC760P4 and SC750P4 chassis

5.10 TYAN THUNDER i840 (S2520)

THUNDER i840 (S2520)	THUNDER i840 HOMEPAGE

PERFORMANCE RATING:
3 streams YUV uncompressed

TESTED CONFIGURATION:
+Dual PIII 1GHz 133 Mhz FSB
+512 MB PC800 RDRAM
+Matrox G400 32MB AGP VGA
+Adaptec 29160 SCSI host adapter BIOS v2.55.0
+Adaptec 39160 Dual Channel SCSI host adapter
+Qlogic Dual Channel SCSI QLA12160 Host Adapter
+IWILL DU3160 Dual Channel SCSI Host Adapter(Dual Channel external connection requires an additional internal to external adapter cable.)
+Integrated Intel 82559 Network Controller
+8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

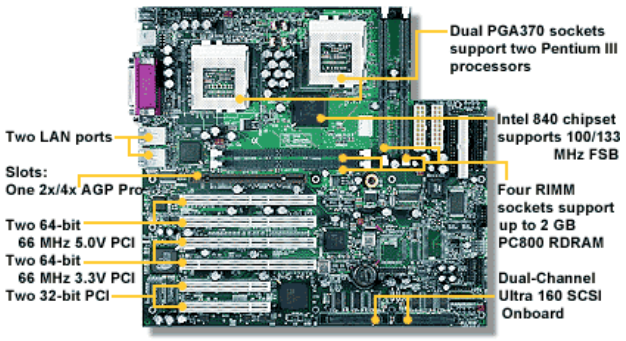
SLOT ASSIGNMENTS:

AGP : Matrox G400 AGP VGA
PCI64-4: Empty
PCI64-3: Empty
PCI64-2: TARGA 3000
PCI64-1: Empty
PCI32-2: Empty
PCI32-1: Empty

Note: PCI64-4 is closest to AGP slot

CONFIGURATION NOTES:

Use PCILOCK boot option when running under Windows NT 4.0


Dual PGA370 sockets support two Pentium III processors
Two LAN ports
Slots:
One 2x/4x AGP Pro
Two 64-bit 66 MHz 5.0V PCI
Two 64-bit 66 MHz 3.3V PCI
Two 32-bit PCI
Intel 840 chipset supports 100/133 MHz FSB
Four RIMM sockets support up to 2 GB PC800 RDRAM
Dual-Channel Ultra 160 SCSI Onboard

FEATURES AND SPECIFICATIONS:

Form Factor:
Extended ATX footprint (13" x 12")
Supported Processors:
Dual PGA370 ZIF sockets
Supports two Intel Pentium III processors (FC-PGA)
Onboard VRMs (VRM 8.4 spec)
Front-Side Bus support for 100MHz and 133
Memory Type:
Dual-channel memory bus
Four 184-pin RIMM sockets
Supports up to 2GB PC800 RDRAM
3.2GB/sec maximum memory bandwidth
Chipset:
Intel 840 chipset
MCH + ICH2 + P64H + FWH (4Mb)
Intel P64H to support 64-bit / 66MHz slots
National PC87366 LPC Super I/O chip
I/O Expansion Slots:
One AGP Pro slot supports 2x/4x modes
Two 64-bit / 66MHz (3.3-volt) PCI slots
Two 64-bit / 66MHz (5.0-volt) PCI slots
Two 32-bit / 33MHz (5.0-volt) PCI slots
Integrated Devices:
Adaptec® AIC-7899 Dual channel Ultra160 SCSI
Two Intel® 82559 10/100 LAN controllers
10/100Mbps data transfer rate per controller
Two Ultra DMA (UDMA/100) bus master/EIDE channels that support an IDE drive data transfer rate of 100 MHz
4 USB (Universal Serial Bus) ports (two onboard connectors and two headers)
PS/2 keyboard and PS/2 mouse connectors
Two fast UART 16550 compatible serial ports
One ECP/EPP parallel port
One floppy port
Chassis Compatibility:
Extended ATX chassis

PINNACLE SYSTEMS

5.11 TYAN THUNDER K7 (S2462)

THUNDER K7 (S2462)

THUNDER K7 HOMEPAGE

PERFORMANCE RATING:
3 streams YUV uncompressed

TESTED CONFIGURATION:
+Dual Athlon 1.2GHz 266 Mhz FSB
+256 MB PC2100 DDR SDRAM
+Matrox G400 32MB AGP VGA
+Adaptec 29160 SCSI host adapter BIOS v2.55.0
+Adaptec 39160 Dual Channel SCSI host adapter
+Qlogic Dual Channel SCSI QLA12160 Host Adapter
+IWILL DU3160 Dual Channel SCSI Host Adapter(Dual Channel external connection requires an additional internal to external adapter cable.)
+Integrated 3COM Network Controller
+8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives

SLOT ASSIGNMENTS:

AGP : Matrox G400 AGP VGA
PCI64-5: Empty
PCI64-4: Empty
PCI64-3: TARGA 3000
PCI64-2: Empty
PCI64-1: Empty

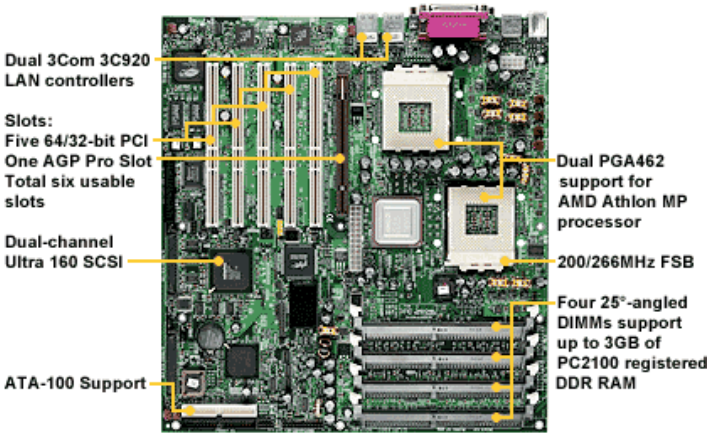
Note: PCI32-4 is closest to AGP slot

CONFIGURATION NOTES:

Only certified for Windows 2000, SP1 or later.

Onboard VGA controller is compatible with T3K.
But for better performance please use a certified VGA adapter.

AMD recommended using 460W Power Supply


Dual 3Com 3C920 LAN controllers
Slots: Five 64/32-bit PCI One AGP Pro Slot Total six usable slots
Dual-channel Ultra 160 SCSI
ATA-100 Support
Dual PGA462 support for AMD Athlon MP processor
200/266MHz FSB
Four 25°-angled DIMMs support up to 3GB of PC2100 registered DDR RAM

FEATURES AND SPECIFICATIONS:

Form Factor:
Extended ATX footprint (13" x 12")
Supported Processors:
Dual PGA462 ZIF sockets
Supports two AMD Athlon MP processors
Two onboard VRMs
System bus support for 200MHz and 266MHz
Memory Type:
Four 2.5v 184-pin Registered DDR DIMM sockets 25° angled sockets enable rackmount installation
Supports up to 3GB of PC2100 Registered DDR RAM
Supports ECC (72-bit) memory modules
Chipset:
AMD-760 MP chipset
AMD-762 North bridge & AMD-766 South bridge
Winbond W83627HF Super I/O ASIC
I/O Expansion Slots:
One 4xAGP slot
5 64-bit PCI bus mastering slots at 33 MHz
Integrated Devices:
ATI RAGE XL VGA with 4MB SDRAM
Adaptec® AIC-7899 Dual channel Ultra160 SCSI
Two 3Com 3C920 LAN controllers 10/100Mbps data transfer rate per controller
Two Ultra DMA (UDMA/100) bus master/EIDE channels that support an IDE drive data transfer rate of 100 MHz
4 USB (Universal Serial Bus) ports (two onboard connectors and two headers)
PS/2 keyboard and PS/2 mouse connectors
Two fast UART 16550 compatible serial ports
One ECP/EPP parallel port
One floppy port
Chassis Compatibility:
Extended ATX chassis
Requires 460W Power Supply

PINNACLE SYSTEMS

5.12 Supermicro Super SSA370 FCPGA motherboard

Certification Testing – tested with CODI 2.0B3 release and 1.5B55 Pinky/Premiere 6
CODI testing – ran all CODI examples
Pinky testing – ran a 1 Hour 17 minute project to ~139,000 frames
Project1 consists of three YUV uncompressed streams (one full screen w/ two overlayed PIPs) with five graphic layers (Title Deko generated titles)
DV25 testing (capture and playback)
MPEG I-Frame (capture and playback)
Boards used for testing included the following:
CODI – TARGA3101 and TARGA3210
Pinky – TARGA3100

BIOS revision and date - AMIBIOS BIOS version 07.00.xx Date 3/28/2001 BIOS rev. 1.1a
BIOS ID SSA70328
OS and service pack info. – Windows2000 Professional w/ sp2
chipset - Intel 815E Solano chipset
CPU configuration – single processor, socket 370/FCPGA Flip Chip
processor count and speed – single 1000Mhz. Intel Pentium III
memory type and amount – PC133 unbuffered SDRAM, 256MB 1-256MB DIMM Module
bus frequency – 133MHz. FSB
form factor – ATX
power supply - 300W
display adapter – ATI Radeon 32MB DDR AGP Adapter
system drive subsystem – Maxtor 531DX Ultra ATA-100 15GB 5400rpm hard drive
video drive subsystem – Adaptec 39160 Dual channel Ultra160/M LVD SCSI adapter with eight Quantum Atlas 10k Ultra160/m SCSI drives
PCI/AGP slot count and type - one AGP 4XPro, six 32bit/33MHz. PCI and one CNR
slot placement of plug-in PCI peripherals – Adaptec 39160 in PCI slot 4, TARGA3100 in PCI slot 2.
I/O interface – One 25-pin parallel port, Two 9-pin serial ports (16550 UART), Mini-DIN keyboard and mouse ports, Audio ports (line-in, line-out, microphone-in), Four Universal Serial Bus (USB) ports
network interface - CNR slot for add-in NIC
additional integrated peripherals – Dual channel UltraDMA , on-board audio (AC'97 2.1 compliant link for audio and telephony CODECs)
BIOS settings – Change default BIOS option for Primary Video Device to “External AGP”. Change Internal Graphics Mode Select to “Disable”.
installation notes – There were problems with having the SCSI Host Adapter BIOS enabled on the Adaptec 39160 card. The adapter BIOS was causing a BSOD at Windows logon. The resolution is to enter the SCSI BIOS, go to the Advanced section, and disable the Host Adapter BIOS. This is not needed, except in the case of booting from a SCSI disk, and video array performance is not affected in any way by disabling the Host Adapter BIOS.

5.13 IWILL DX400-SN

IWILL DX400-SN	DX400 Homepage

PERFORMANCE RATING:
3 Uncompressed YUV streams

TESTED CONFIGURATION:
2 x 1.7GHz Intel Pentium Xeon Processors
2 x 256MB PC800 ECC RDRAM from Apacer
1 x ATI RAGE 128GL 32MB AGP
1 x Adaptec AHA-39160 Dual Channel U160
1 x Seagate ST31803LW System Drive
8 x Seagate ST318452LC in JBOD Chassis
Windows 2000 SP2, DirectX8.0a
Adobe Premiere 6.01
Targa 3000 version 1.5

SLOT ASSIGNMENTS:

AGP: ATI RAGE 128 GL AGP
PCI32-2: Empty
PCI32-1: Empty
PCI64-2: TARGA 3000
PCI64-1: AHA-39160

CONFIGURATION NOTES:

Mainboard requires P4 compatible power supply 400W or higher in order to operate properly.

Memory Expansion Card might require specially designed chassis that supports 7 full length cards.

Iwill recommended NMB IT002A430WSW power supply to be used.

Under Windows 2000, Intel INF installer version 3.20 or higher needed.

For optimum IDE transfer, use Intel's UltraATA driver version 6.20 or higher.

FEATURES AND SPECIFICATIONS:

Form Factor:
ATX form factor with 305mm x 330mm board size
Supported Processors:
Supports dual/single Intel® XeonTM(Socket 603) processor
Supports CPU speed from 1.3GHz up to 1.7GHz and higher
Memory Type:
Supports DRDRAM modules (RAMBUS memory)
Bus operating at a clock rate of 400MHz to 800MHz Max 4GB memory capacity
Chipset:
Intel® 860 chipset
MCH(1012 OLGA)-memory & graphic
ICH2(36 0EBGA)-I/O controller
FWH(32 PLCC)-BIOS and management controller
P64H(241 mBGA)-64bit bus master PCI expander
I/O Expansion Slots:
1 x AGP Pro Slot supports AGP 4X mode
Supports AGP Pro 1.5V only
2 x 64-bit/66MHz Bus Master PCI Slots
3 x 32-bit/33MHz Bus Master PCI Slots
Integrated Devices:
Onboard dual channel ATA100 IDE controller
Onboard dual channel Ultra160 Qlogic SCSI controller
AD1881 AC'97 Audio CODEC
Integrated Intel® 82559 10/100 LAN controller
1 x Floppy connector supports up to two drives
1 x 9-pin 16550-based serial ports
1 x 25-pin SPP/ECP/EPP parallel
2 x PS/2 connectors(keyboard and mouse)
6 x USB ports (2 x internal USB)
Chassis Compatibility:
WATX compatible chassis

5.14 SuperMicro P4DC6

SuperMicro P4DC6	P4DC6 Homepage

PERFORMANCE RATING:
3 Uncompressed YUV Streams

TESTED CONFIGURATION:
2 x 1.7GHz Intel Pentium Xeon Processors
2 x 256MB PC800 ECC RDRAM from Apacer
1 x ATI RAGE 128GL 32MB AGP
1 x Adaptec AHA-39160 Dual Channel U160
1 x Seagate ST31803LW System Drive
8 x Seagate ST318452LC in JBOD Chassis
Windows 2000 SP2, DirectX8.0a
Adobe Premiere 6.01
Targa 3000 version 1.5

SLOT ASSIGNMENTS:

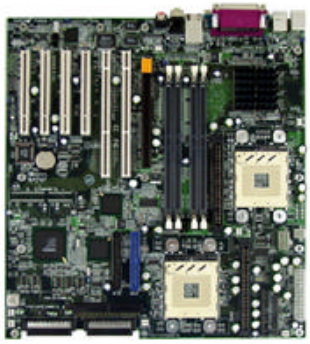
AGP: ATI Rage 128 GL
PCI64-2: AHA-39160
PCI64-1: TARGA 3000
PCI32-4: Empty
PCI32-3: Empty
PCI32-2: Empty
PCI32-1: Empty

CONFIGURATION NOTES:

Mainboard requires P4 compatible power supply 400W or higher in order to operate properly.

Under Windows 2000, Intel INF installer version 3.20 or higher needed.

For optimum IDE transfer, use Intel's UltraATA driver version 6.20 or higher.



FEATURES AND SPECIFICATIONS:

Form Factor:
Extended ATX
Size: 12" x 13" (W x H)
Supported Processors:
Intel 603-pin Xeon CPU 1.5-2.0GHz+
Memory Type:
Dual Channel 600/800 MHz RDRAM with Transfer Rate up to 3.2 GB/s
Four 184-pin RIMMs for 600/800 MHz RDRAM up to 2 GB
Two Rambus Inline memory modules of the same memory size is the minimum requirement.
Chipset:
Intel 860 chipset
MCH(1012 OLGA)-memory & graphic
ICH2(36 0EBGA)-I/O controller
FWH(32 PLCC)-BIOS and management controller
P64H(241 mBGA)-64bit bus master PCI expander
I/O Expansion Slots:
2 64-bit 66MHz PCI
4 32-bit 33MHz PCI
1 4xAGP Pro 1.5V
Integrated Devices:
Dual EIDE ports support Ultra DMA 100MB/s of Burst data transfer rate, supports UDMA Mode 5, PIO Mode 4 and ATAPI
AC97' Audio
Onboard Adaptec AIC-7899W (7902 future option) dual channel Ultra160 (320) SCSI controller
Intel 82559 LAN controller
PC hardware health monitoring
1 Floppy
2 Fast UART 16550 serial ports
1 ECP/EEP parallel port
1 Infrared header
Up to 4 USB ports
PS/2 keyboard and mouse ports
Chassis Compatibility:
Extended ATX

PINNACLE SYSTEMS

5.15 Intel D845WN

Intel D845WN	D845WN Homepage

PERFORMANCE RATING:
2 Uncompressed YUV Streams

TESTED CONFIGURATION:
1x P4 1.7GHz 478 PIN FCPGA
2x 256MB PC133 SDRAM
1x 40GB Maxtor ATA100 7200 RPM System Drive
1x AHA 29160 U160 SCSI controller
8x Seagate ST318452LC in JBOD Chassis
1x Matrox G550 Dual Head 32MB
1x 3Com Elink III 10/100 Network Adapter
Windows 2000 Professional SP2, DirectX8.0a
Adobe Premiere 6.01

SLOT ASSIGNMENTS:

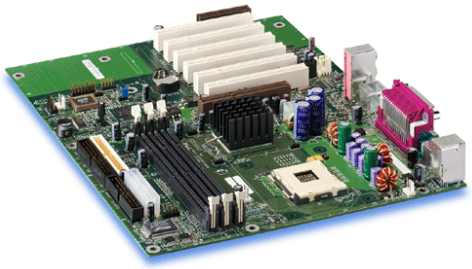
AGP: Matrox G550 AGP
PCI32-6: AHA-29160
PCI32-5: 3COM Elink3 10/100 Network
PCI32-4: Empty
PCI32-3: Empty
PCI32-2: TARGA 3000
PCI32-1: Empty

CONFIGURATION NOTES:

Mainboard requires P4 power supply 300W or better.

Under Windows 2000, Intel INF installer version 3.20 or higher needed.

For optimum IDE transfer, use Intel's UltraATA driver version 6.20 or higher.



FEATURES AND SPECIFICATIONS

Form Factor:
ATX
Supported Processors:
Intel 478-pin Pentium 4 (Willamette/Northwood) FC-PGA2, 1.3-2.0GHz+
Memory Type:
PC133 SDRAM addressable to 3GB
Chipset:
Intel 845 Chipset
I/O Expansion Slots:
6 32-bit, 33 MHz PCI bus mastering slots
1 4xAGP
1 CNR
Integrated Devices:
Dual Ultra DMA (UDMA/100MB/s) Burst data transfer rate supports UDMA Mode 5, PIO Mode 4, ATAPI
AC97' Audio (OEM optional)
4 USB (Universal Serial Bus) ports
PS/2 keyboard and PS/2 mous connectors
2 fast UART 16550 compatible serial ports
1 ECP/EPP parallel port
1 Infrared port
1 floppy port
Chassis Compatibility:
Standard ATX

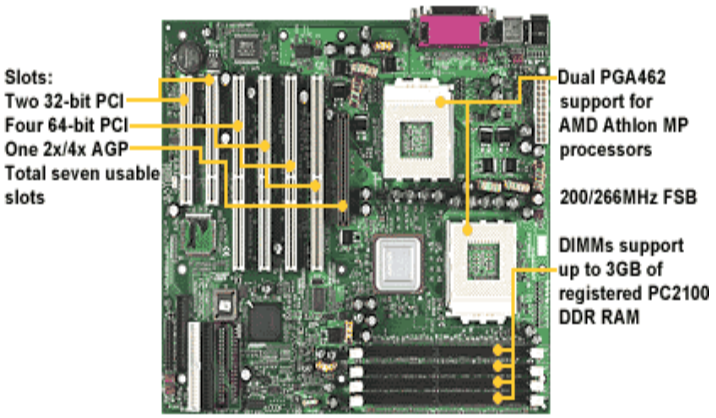
5.16 TYAN Tiger MP

TIGER MP (S2460)

TIGER MP HOMEPAGE

PERFORMANCE RATING:
3 streams YUV uncompressed

TESTED CONFIGURATION:
+Dual Athlon MP 1.2GHz 266 Mhz FSB
+512 MB PC2100 DDR SDRAM
+Matrox G550 32MB AGP VGA
+Intel PRO/100 ethernet adapter
+Adaptec 29160 SCSI host adapter BIOS v2.55.0
+Adaptec 39160 Dual Channel SCSI host adapter
+Qlogic Dual Channel SCSI QLA12160 Host Adapter
+IWILL DU3160 Dual Channel SCSI Host Adapter(Dual Channel external connection requires an additional internal to external adapter cable.)
+Integrated Intel 82559 Network Controller
+8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives


Slots:
Two 32-bit PCI
Four 64-bit PCI
One 2x/4x AGP
Total seven usable slots
Dual PGA462 support for AMD Athlon MP processors
200/266MHz FSB
DIMMs support up to 3GB of registered PC2100 DDR RAM

SLOT ASSIGNMENTS:

AGP : Matrox G400 AGP VGA
PCI64-4: Empty
PCI64-3: Empty
PCI64-2: Targa 3000
PCI64-1: AHA-39160
PCI32-2: Intel PRO/100 ethernet
PCI32-1: Empty

Note: PCI64-4 is closest to AGP slot

CONFIGURATION NOTES:

Only certified for Windows 2000, SP1 or later.

AMD recommended using 460W Power Supply

FEATURES AND SPECIFICATIONS:

Form Factor:
ATX footprint (12" x 10.3", 304.8 x 261.62mm)
Supported Processors:
Dual PGA462 ZIF sockets
Supports two AMD Athlon MP processors
Two onboard VRMs
System bus support for 200MHz and 266MHz
Memory Type:
Four 2.5v 184-pin Registered DDR DIMM sockets 25° angled sockets enable rackmount installation
Supports up to 3GB of PC2100 Registered DDR RAM
Supports ECC (72-bit) memory modules
Chipset:
AMD-760 MP chipset
AMD-762 North bridge & AMD-766 South bridge
Winbond W83627HF Super I/O ASIC
I/O Expansion Slots:
One 4xAGP slot
Four 64-bit PCI slots
Two 32-bit PCI slots
Integrated Devices:
Two Ultra DMA (UDMA/100) bus master/EIDE channels that support an IDE drive data transfer rate of 100 MHz
4 USB (Universal Serial Bus) ports (two onboard connectors and two headers)
PS/2 keyboard and PS/2 mouse connectors
Two fast UART 16550 compatible serial ports
One ECP/EPP parallel port
One floppy port
Chassis Compatibility:
ATX Chassis
Requires 460W Power Supply

PINNACLE SYSTEMS

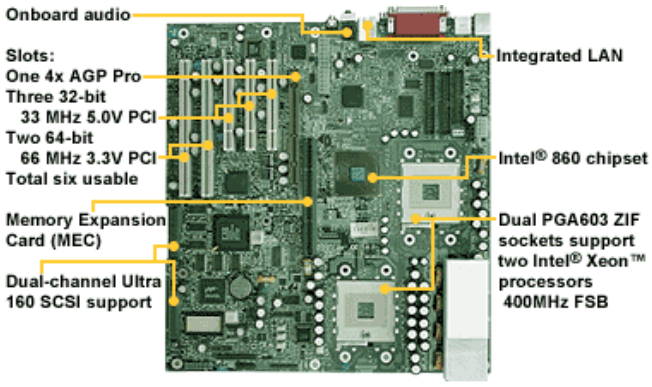
5.17 TYAN THUNDER i860

THUNDER i860 (S2603)

THUNDER i860 HOMEPAGE

PERFORMANCE RATING:
3 streams YUV uncompressed

TESTED CONFIGURATION:
+Dual Xeon 1.7GHz 400MHz FSB
+512 MB PC 800 RDRAM
+ATI Radeon VE 32MB VGA
+Adaptec 29160 SCSI host adapter BIOS v2.55.0
+Adaptec 39160 Dual Channel SCSI host adapter
+Qlogic Dual Channel SCSI QLA12160 Host Adapter
+IWILL DU3160 Dual Channel SCSI Host Adapter(Dual Channel external connection requires an additional internal to external adapter cable.)
+ATTO UL3D Dual Channel SCSI adapter
+Integrated Intel® 82550EY LAN controller
+8 Quantum Atlas 10K 9WLS Ultra160m 9 GB drives



SLOT ASSIGNMENTS:

AGP : ATI RADEON VE VGA
PCI32-3: Empty
PCI32-2: Empty
PCI32-1: Empty
PCI64-2: Targa 3000
PCI64-1: ATTO UL3D

Note: PCI32-3 is closest to AGP slot

FEATURES AND SPECIFICATIONS:

Form Factor:
Extended ATX footprint (13" x 12", 330.2mm x 304.8mm)
Supported Processors:
Dual PGA370 ZIF sockets
Supports two Intel Pentium III processors (FC-PGA)
Onboard VRMs (VRM 8.4 spec)
Front-Side Bus support for 100MHz and 133
Memory Type:
Memory Expansion Card (MEC) design
Eight 184-pin RIMM sockets
Supports up to 4GB of PC800 Rambus memory
Chipset:
Intel® 860 chipset
82860 North Bridge, 82801BA I/O Controller

CONFIGURATION NOTES: Use PCILOCK boot option when running under Windows NT 4.0 Busmaster must be enabled in all PCI Slots (by default, busmaster is disabled in all PCI slots.) Please consult the user manual on how to enable busmaster in the BIOS.	Hub, 82802AB Firmware Hub and 82806AA PCI 64 Hub **I/O Expansion Slots:** One AGP Pro slot supports 2x/4x modes Two 64-bit / 66MHz (3.3-volt) PCI slots Three 32-bit / 33MHz (5.0-volt) PCI slots **Integrated Devices:** LSI Symbios 53C1010R controller Dual-channel Ultra160 SCSI support 160MBps maximum data throughput per channel Intel® 82550EY LAN controller Analog Devices AD1885 chipset AC'97 codec Two Ultra DMA (UDMA/100) bus master/EIDE channels that support an IDE drive data transfer rate of 100 MHz 4 USB (Universal Serial Bus) ports (two onboard c onnectors and two headers) PS/2 keyboard and PS/2 mouse connectors Two fast UART 16550 compatible serial ports One ECP/EPP parallel port One floppy port **Chassis Compatibility:** Extended ATX chassis

5.18 Intel D850MV

INTEL D850MV

PERFORMANCE RATING:
2 streams YUV uncompressed

TESTED CONFIGURATION:
1x P4 2.0A GHz 478 PIN FCPGA
2x 256MB PC800 RDRAM
1x 40GB IBM ATA100 7200 RPM System Drive
Builtin Intel 10/100 Network Adapter
1x AHA 39160 U160 SCSI controller
8x Seagate ST318452LC in JBOD Chassis
1x Matrox G550 Dual Head 32MB
Windows 2000 Professional SP2,
DirectX8.0a
Adobe Premiere 6.01

SLOT ASSIGNMENTS:

AGP : Matrox G550
PCI32-5: Adaptec AHA-39160
PCI32-4: Empty
PCI32-3: Empty
PCI32-2: TARGA 3000
PCI32-1: Empty

Note: PCI32-5 is closest to AGP slot

CONFIGURATION NOTES:

Mainboard requires P4 power supply 300W or better.

Under Windows 2000, Intel INF installer version 3.20 or higher needed.

For optimum IDE transfer, use Intel's UltraATA driver version 6.20 or higher.

Tested BIOS revision MV850.10A.86A.0032.P13

FEATURES AND SPECIFICATIONS:

Form Factor:
ATX (12.0 inches by 9.6 inches)
Supported Processors:
Intel 478-pin Pentium 4 (Willamette/Northwood) FC-PGA2,
1.3-2.0GHz+ 400 MHz system data bus
Memory Type:
Two Direct-RDRAM channels with two RIMMs per channel (four RIMM sockets)
Support for up to 2 GB of system memory using PC600 or PC800 RDRAM
Chipset:
Intel® 850 Chipset, consisting of:
Intel® 82850 Memory Controller Hub (MCH)
Intel® 82801BA I/O Controller Hub (ICH2)
Intel® 82802AB 4 Mbit Firmware Hub (FWH)
I/O Expansion Slots:
One 4xAGP slot
Five PCI bus add-in card connectors (SMBus routed to PCI bus connector 2)
Integrated Devices:
Audio subsystem that uses the Analog Devices AD1881 analog codec for AC 97 processing
Intel® 82562EM 10/100 Mbit/sec Platform LAN Connect (PLC) device
Two Ultra DMA (UDMA/100) bus master/EIDE
channels that support an IDE drive data transfer
rate of 100 MHz
4 USB (Universal Serial Bus) ports (two onboard
connectors and two headers)
PS/2 keyboard and PS/2 mouse connectors
Two fast UART 16550 compatible serial ports
One ECP/EPP parallel port
One floppy port
Chassis Compatibility:
Standard ATX chassis

PINNACLE SYSTEMS

5.19 Intel D845BG

Intel D845BG	D845BG Homepage

PERFORMANCE RATING:
2 Uncompressed YUV Streams

TESTED CONFIGURATION:
1x P4 2.0A GHz 478 PIN FCPGA
2x 256MB DDR 266 Memory
1x 40GB IBM ATA100 7200 RPM System Drive
Builtin Intel 10/100 Network Adapter
1x AHA 39160 U160 SCSI controller
8x Seagate ST318452LC in JBOD Chassis
1x Matrox G550 Dual Head 32MB
Windows 2000 Professional SP2, DirectX8.0a
Adobe Premiere 6.01

SLOT ASSIGNMENTS:

AGP: Matrox G550 AGP
PCI32-6: AHA-39160
PCI32-5: Empty
PCI32-4: Empty
PCI32-3: Empty
PCI32-2: TARGA 3000
PCI32-1: Empty

CONFIGURATION NOTES:

Mainboard requires P4 power supply 300W or better.

Under Windows 2000, Intel INF installer version 3.20 or higher needed.

For optimum IDE transfer, use Intel's UltraATA driver version 6.20 or higher.

Tested BIOS Rev.
PT84510A.86A.0024.P05

FEATURES AND SPECIFICATIONS

Form Factor:
ATX
Supported Processors:
Intel 478-pin Pentium 4 (Willamette/Northwood) FC-PGA2, 1.3-2.0GHz+
Memory Type :
DDR266 DRAM Addressable to 2GB
Chipset:
Intel 845B Chipset
I/O Expansion Slots:
6 32-bit, 33 MHz PCI bus mastering slots
1 4xAGP
1 CNR
Integrated Devices:
Dual Ultra DMA (UDMA/100MB/s) Burst data transfer rate supports UDMA Mode 5, PIO Mode 4, ATAPI
AC97' Audio (OEM optional)
4 USB (Universal Serial Bus) ports
PS/2 keyboard and PS/2 mous connectors
2 fast UART 16550 compatible serial ports
1 ECP/EPP parallel port
1 Infrared port
1 floppy port
Chassis Compatibility:
Standard ATX

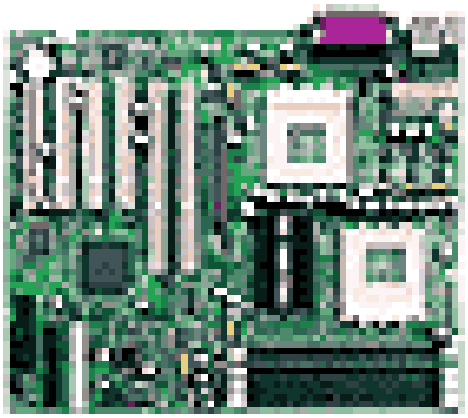
5.20 TYAN Tiger MPX (S2466)

TIGER MPX (S2466)

TIGER MPX HOMEPAGE

PERFORMANCE RATING:
3 streams YUV uncompressed

TESTED CONFIGURATION:
+Dual Athlon MP 2000 266 Mhz FSB
+512 MB PC2100 DDR SDRAM
+Matrox G550 32MB AGP VGA
+3com 3C920 10/100 Network Adapter
+Adaptec 39160 Dual Channel SCSI host adapter
+8x Seagate ST318452LC in JBOD Chassis



SLOT ASSIGNMENTS:

AGP : Matrox G550 AGP VGA
PCI64-2: AHA-39160
PCI64-1: Targa 3000
PCI32-4: Empty
PCI32-3: Empty
PCI32-2: Empty
PCI32-1: Empty

Note: PCI64-2 is closest to AGP slot

CONFIGURATION NOTES:

Only certified for Windows 2000, SP1 or later.

AMD recommended using 460W Power Supply

First version 1.0 BIOS is not compatible with ATI RADEON 8500. Please update with the latest version for compatibility (Current version is 1.01).

Model S2466N has USB problems thus uses an included add on PCI card for USB functions.

Model S2466N-4M is a fixed version of the 2466N with no USB problems.

FEATURES AND SPECIFICATIONS:

Form Factor:
ATX footprint (12" x 10.3", 304.8 x 261.62mm)
Supported Processors:
Dual PGA462 ZIF sockets
Supports two AMD Athlon MP processors
Two onboard VRMs
System bus support for 200MHz and 266MHz
Memory Type:
Four 2.5v 184-pin Registered DDR DIMM sockets 25° angled sockets enable rackmount installation
Supports up to 3GB of PC2100 Registered DDR RAM
Supports ECC (72-bit) memory modules
Chipset:
AMD-760 MPX chipset
AMD-762 North bridge & AMD-766 South bridge
Winbond W83627HF Super I/O ASIC
I/O Expansion Slots:
One 4xAGP slot
Four 32-bit PCI slots
Two 64-bit PCI slots
Integrated Devices:
Two Ultra DMA (UDMA/100) bus master/EIDE channels that support an IDE drive data transfer rate of 100 MHz
4 USB (Universal Serial Bus) ports (two onboard connectors and two headers)
PS/2 keyboard and PS/2 mouse connectors
Two fast UART 16550 compatible serial ports
One ECP/EPP parallel port
One floppy port
3Com 3C920 ASIC with 3C905 driver set LAN controller
Supports 10Mbps and 100Mbps transfer rates

Chassis Compatibility:
ATX Chassis
Requires 460W Power Supply

PINNACLE SYSTEMS

5.21 TESTED BUT NON-CERTIFIED MOTHERBOARDS

The following list contains motherboards that are tested either by Pinnacle Systems certification or it's partners and appear to be compatible with TARGA 3000, along with the specified operating system. However these systems are not necessarily in house at Pinnacle and no guarantee of support can be made.

BRAND	MODEL	CPU TYPE	MEM TYPE	CHIPSET	PCI TYPE	NT 4.0/W2K COMPATIBLE
INTEL	CA810E	PIII(370)	SDRAM	I810E	32BIT	YES/YES
INTEL	D815EEA2	PIII(370)	SDRAM	I815E	32BIT	YES/YES
INTEL	D815EPEA2	PIII(370)	SDRAM	I815EP	32BIT	YES/YES
INTEL	D820LP	PIII	RDRAM	I820	32BIT	YES/YES
INTEL	VC820	PIII	RDRAM	I820	32BIT	YES/YES
S.MICRO	P3TSSA	PIII(370)	SDRAM	I815E	32BIT	YES/YES
S.MICRO	370DE6	PIII(370)	ECC SDRAM	SW HE-SL	64BIT	YES/YES
S.MICRO	P3TDL3	PIII(370)	ECC SDRAM	SW LE	64BIT	YES/YES
S.MICRO	P4STA	P4	RDRAM	I850	32BIT	YES/YES
G.BYTE	GA-7DXR	K7-TBIRD	DDR SDRAM	AMD 761	32BIT	NO/YES
TYAN	S2510	PIII(370)	ECC SDRAM	SW LE	64BIT	YES/YES
TYAN	S2567	PIII(370)	ECC SDRAM	SW HE-SL	64BIT	YES/YES
Q-LITY	PIIIB-DS	PIII	SDRAM	440BX	32BIT	YES/YES

6 TARGA 3000 Technical Advisories

6.1 PCILOCK Boot Option

THIS ADVISORY APPLIES TO ALL CERTIFIED WORKSTATIONS WORKING UNDER NT4

Summary: Adding /PCILOCK switch to BOOT.INI allows Adobe Premiere to launch properly.
Note that this is required for Windows NT but should not be used under Windows 2000.

Procedure:

1. Log onto NT with administrative privileges
2. Locate BOOT.INI. Create a copy in another location for backup
3. Disable Read-Only file attribute
4. Open or edit file in Notepad or Edit.
5. Copy the line for default OS (normally first option)Insert and paste copy in first position and append with /PCILOCK switch.

After the procedure, the file should look similar to this:

[boot loader]

timeout=0
default=multi(0)disk(0)rdisk(0)partition(1)\WINNT

[operating systems]
multi(0)disk(0)rdisk(0)partition(1)\WINNT="Windows NT Workstation Version 4.00 TARGA 3000" /PCILOCK
multi(0)disk(0)rdisk(0)partition(1)\WINNT="Windows NT Workstation Version 4.00"
multi(0)disk(0)rdisk(0)partition(1)\WINNT="Windows NT Workstation Version 4.00 [VGA mode]" /basevideo /sos

6. Save BOOT.INI and close
7. Enable Read-Only file attribute
8. Reboot system

7 Certified Display Adapters

The following list contains VGA adapters that are tested with a Targa 3000 workstation and are proven to be compatible with T3K and Adobe Premiere 5.1c and 6.0. Compatibility with Windows NT 4.0 and/or Windows 2000 Professional is noted.

BRAND	MODEL	MEM SIZE	CHIPSET	INTERFACE TYPE	NT 4.0/W2K COMPATIBLE
MATROX	G400	16/32	G400	AGP	YES/YES
MATROX	G450	16/32	G450	AGP/PCI	YES/YES
MATROX	G550	32/64	G550	AGP	YES/YES
ATI	EXPERT 98	8	RAGE PRO TURBO	AGP/PCI	YES/YES
ATI	EXPERT@WORK	8	RAGE PRO TURBO	AGP/PCI	YES/YES
ATI	EXPERT@PLAY	8	RAGE PRO TURBO	AGP/PCI	YES/YES
ATI	EXERT 2000	16/32	RAGE 128 GL	AGP/PCI	YES/YES
ATI	ALL IN WONDER 128	32	RAGE 128 GL	AGP	YES/YES
ATI	RADEON	32	ATI RADEON	AGP	YES/YES
ATI	RADEON VE	32	ATI RADEON VE	AGP	YES/YES
ATI	EXPERT 128	32	RAGE 128 GL	AGP	YES/YES
ATI	RAGE FURY	32	RAGE 128 GL	AGP	YES/YES
ATI	RAGE MAGNUM	32	RAGE 128 GL	AGP	YES/YES
ATI	RADEON DDR	32/64	ATI RADEON	AGP	YES/YES
ATI	RADEON 7500	64	ATI RADEON 7500	AGP	YES/YES
ELSA	SYNERGY II	32	NVIDIA TNT 2	AGP	YES/YES
ELSA	SYNERGY III	32	NVIDIA QUADRO MXR	AGP	YES/YES
ELSA	GLADIAC GeForce 2 GTS	32	NVIDIA GeForce 2 GTS	AGP	YES/YES
ELSA	GLADIAC 511	32	NVIDIA GeForce 2 MX 400	AGP	YES/YES
ELSA	GLADIAC 520	64	NVIDIA GeForce 3	AGP	YES/YES
LEADTEK	GeForce 2 MX DH Pro	32	NVIDIA GeForce 2 MX	AGP	YES/YES
NVIDIA	TNT 2 M64	32	NVIDIA TNT 2	AGP/PCI	YES/YES
NVIDIA	TNT 2 ULTRA	32	NVIDIA TNT 2 ULTRA	AGP/PCI	YES/YES
3DFX	VOODOO 1000	16	VOODOO 2	AGP/PCI	YES/YES
3DFX	VOODOO 2000	16	VOODOO 3	AGP	YES/YES
3DFX	VOODOO 3000	32	VOODOO	AGP	YES/YES

7.1 Overlay Explained

The TARGA 3000 transfers a video sample directly to the memory of the display adapter via the AGP bus. Always use a video monitor to determine the quality of your final video output, not the overlay image. Overlay software transfers the video sample into an invisible part of the display adapter's memory. The display adapter will then scale and convert the image and transfer it to the right place in the visible part of display memory. Not all display adapters have this feature and thus may not draw or display a correct overlay. Occasionally, we have seen cases where the display adapter reports to TARGA that it can do an overlay, but then either does not do so or corrupts the graphic interface. If compatibility of the display adapter is in question, use one of the TARGA 3000 certified display adapters.

7.2 Dual Monitor Support

The Matrox G200 and G400, G450, G550 Dual Head, ATI RADEON VE, ATI RADEON 7500, Elsa Synergy III, LeadTek GeForce 2 MX DH Pro.

8 Disk Arrays

8.1 Image Quality and Data Rates

Preserving image quality is probably the most important feature TARGA 3000. By processing all video in uncompressed mode, there is no loss of visual information. If that wasn't enough, the 3000 can capture and process RGBA (4:4:4:4), creating video streams over 40 MBps in bandwidth, which can in this case exceed 144 MBps during real-time transitions. All this is supported by the system's audio-video hard drive subsystem, and it's ability to provide data at a predictable pace. Consequently, we recommend the latest technology in data-delivery, whose advances will no doubt outpace the frequency which this cookbook will be updated.

8.2 Certified Hard Drive Controllers

BRAND	MODEL	SCSI TYPE	PCI TYPE	COMPATIBILITY NOTES
ADAPTEC	39160	U160 x 2	64 bit	Times out on SCSIBENCH32 when more than 3 drives are accessed at a time
ADAPTEC	29160	U160	64 bit	Times out on SCSIBENCH32 when more than 3 drives are accessed at a time
ADAPTEC	3950UB	U2W x 2	64 bit	
ADAPTEC	2940U2W	U2W	32 bit	
ATTO	UL2D	U2W x 2	64 bit	Compatibility problems with Compaq SP750 when SCSI BIOS is enabled.
ATTO	UL3D	U160 x 2	64 bit	Compatibility problems with Compaq SP750 when SCSI BIOS is enabled.
IWILL	SIDE-DU280	U2W x 2	64 bit	Requires internal to external SCSI adapter for dual channel external connection.
IWILL	SIDE-DU3160	U160 x 2	64 bit	Requires internal to external SCSI adapter for dual channel external connection.
LSI LOGIC	SYM53C1010	U160x 2	64 bit	Integrated on some Tyan MBs
LSI LOGIC	SYM53C896	U2W x 2	32 bit	Integrated on Tyan Thunder 2500
QLOGIC	QLA2160	U160 x 2	64 bit	SCSI BIOS will not show up sometimes on Compaq SP750.
ADVANSYS	ASB3950U160	U160 x 2	64 bit	Requires internal to external SCSI adapter for dual channel external connection.
ADVANSYS	ASB3950U2W	U160 x 2	32 bit	Requires internal to external SCSI adapter for dual channel external connection.
ATTO	Express PCI FC66	FIBRE 1Gb	64 bit	Fibre Channel Controller for used with SAN type applications
HP	HB5100	FIBRE 1Gb	64 bit	Fibre Channel Controller for used with SAN type applications

Dual Channel adapters are highly recommended when working with YUV or RGB codecs.

8.3 SCSI Bus types and potential bandwidth:

SCSI UltraWide transfers up to 40 MBps (from controller cache to drive cache), with a 16-bit wide data path. Also referred to as "Fast Wide SCSI-2". Not recommended for data rates above DV or MPEG, as real-world memory-to-disk transfer rates average 12 MBps for each drive.

SCSI Ultra2 transfers up to 80 MBps (from controller cache to drive cache), with a 16-bit wide data path. Also referred to as "Fast Wide SCSI-3", "LVD or Low-Voltage Differential". Often available in dual channel

models, possibly increasing throughput capacity (pending tests will report the effectiveness of multi-channel configurations). Recommended for most data rates, with perhaps the exception of RGB. Real-world memory-to-disk transfer rates can average 18 MBps for each drive.

SCSI Ultra3 transfers up to 160 MBps (from controller cache to drive cache), with a 16-bit wide data path. Also referred to as "160m", "SCSI-3 LVD or Low-Voltage Differential". These are often available in 64-bit PCI bus slot configurations, which allows over 264 MBps transfer rates over the 64-bit portion of the PCI bus. Like the Ultra2 controllers, these are available in dual channel models, increasing throughput capacity. The maximum data rate over a 32-bit PCI bus is 132 MBps (this is a peak, or burst rate. Sustained rates are lower, partly because of the traffic from other devices on the bus). Recommended for most data rates, including the RGB codec. Real-world memory-to-disk transfer rate gains increase less dramatically over Ultra2 LVD, and can average 25 MBps for each drive.

8.4 SCSI Cables and Terminators

Resist the temptation to use the longer SCSI cables. The best results can be achieved by using the shorter, 3-foot or shorter lengths. We always use high quality internal and external SCSI cables from trusted vendors. This is especially true when using LVD (Ultra2 or Ultra3 SCSI), as most do are not marked with any indication of compatibility. This is important, as LVD-compatible cables use twisted-pair wires for each pin connection, allowing differential-voltage interference canceling. Unfortunately, they look nearly identical to UltraWide SCSI cables, which do not use twisted-pairs. At best, the result will be inconsistent communication over the cable.

The internal ribbon cables are easier to work with - the twisted wires are visible, usually terminate with an active LVD terminator (LVD drives do not supply their own termination). The Ultra2 LVD ribbon cables are usually blue and white, while Ultra3 LVD are white and pinkish-salmon. Adaptec notes that signal reflection can occur in lengths of less than 10" between drive connectors in the Ultra2 or Ultra3 LVD ribbon cables, degrading performance.

Sources of high quality SCSI cables and terminators:

Granite Digital
510-471-6442
www.scsipro.com

CS Electronics
714-475-9100
www.scsi-cables.com

8.5 Certified Disk Arrays

Fully integrated certified disk arrays are recommended since they provide the best guarantee of service and performance on what can often be the weakest link in the system. A poor drive array or cables can compromise the performance of the whole system.

8.5.1 Rorke Data MaxArray LVD

Rorke Data MaxArray LVD Product Information

Performance Rating

4-drive: 2 streams YUV uncompressed
8-drive: 3 streams YUV uncompressed

Drives:
IBM Ultra160m SCSI LVD
160 MB/sec bus speed
Split-Bus (8 bay only)

Capacity:
MaxArray configurations range from 18GB through 576GB.

Enclosure:
SCA Backplane technology in 4 Bay Tower, 8 Bay Tower, and 8 Bay Rack configurations.
All-metal enclosure for maximum heat-dissipation.
Locking front door for added security.
Hot-swappable canisters.
4 Bay - 150W removable power supplies and removable, ball-bearing fan.
8 Bay - Qty (2) 300W hot-swappable power supplies and (2) removable, ball-bearing fans.
LVD SCSI ID settings accessibility.
Auto-sensing termination.
Audible and visual alarms for fan, temperature and power fail LED.
Featuring SCA (Single Connect Attachment) Backplane Technology
- As data transmission rates get faster and faster, bus impedance matters. Rorke Data's SCA backplane design reduces impedance on the data bus resulting in increased signal integrity and better performance at these higher speeds. Where it makes sense, we have taken the time to match impedance characteristics to limit the amount of signal reflections causing unwanted noise on the bus which can further degrade signal integrity. In addition, SCA backplane reduces the number of internal connection points which significantly improves long-term reliability

8.5.2 BellStor FORTRA 4-Bay 72GB JBOD

Bell Microproducts sales page

Performance Rating

4-drive: 2 streams YUV uncompressed
Dual 4-drive : 3 streams YUV uncompressed

FORTRA 4-Bay 72GB Desktop JBOD
includes cable and terminator

Bell Microproducts
part number 44118

DRIVES:
four 18GB IBM UltraStar
Ultra160m #07N3240

POWER SUPPLY:
Quantity: 1
Power: 300 watts
Input: 90-260 VAC; 50-60Hz
Output: +5V @ 20A +12V @ 17A

BLOWER:

Quantity: 1
Size: 125mm (4.92")
Airflow: 27.2 CFM (0.76m3/min)
Noise: 51dB(A)

WEIGHT & SIZES (empty):
Unit Weight: 19.7 lbs. 9.0 kg
Height: 11-1/2" (292mm) Width: 7-3/4" (197mm)
Depth: 12-1/2" (318mm)

8.6 Certified Hard Drives (JBOD applications)

The following list of drives have been tested by Pinnacle Systems Certification process and are proven to perform well with Targa 3000 under Premiere 5.1c and 6.0 environment. With the exception of U2W drives, when 8 of the same units are striped with a 64 bit enabled U160 SCSI interface, under optimal cabling (namely SCSI connection and termination), cooling condition and driver configuration, end users can obtain 3 YUV streams real time playback under Premiere environment for at least 25% of physical drive surface.

BRAND	MODEL	CAPACITY	INTERFACE
IBM	DRVS-09	9.1 GB	U2W
IBM	DMVS-09D	9.1GB	SCA-2 U2W
IBM	DDYS-T18350	18.35 GB	SCA-2 U160
IBM	DDYS-T36950	36.7GB	SCA-2 U160
QUANTUM	ATLAS 10K II 9.1	9.1 GB	U160
QUANTUM	ATLAS 10K II 18.2	18.2 GB	U160
QUANTUM	ATLAS 10K III	18.4 GB	U160
QUANTUM	ATLAS V	36.4 GB	U160
SEAGATE	ST39102LW	9.1GB	U2W
SEAGATE	ST39205LW	9.1GB	U160
SEAGATE	ST39204LW	9.1GB	U160
SEAGATE	ST318404LC	18.4GB	SCA-2 U160
SEAGATE	ST318404LW	18.4GB	U160
SEAGATE	ST318452LC	18.4GB	SCA-2 U160
SEAGATE	ST318452LW	18.4GB	U160
SEAGATE	ST318451LW	18.4GB	U160
SEAGATE	ST336705LW	36.7GB	U160
SEAGATE	ST336752LW	36.7GB	U160
SEAGATE	ST336704LW	36.7GB	U160

Note : Some Seagate drives require that the Cache Parameters to be changed from Desktop Mode to Server mode using Seagate's SeaTools software in order to perform well with 3 streams operations. Please refer to the following link to acquire more instructions:
http://www.pinnaclesys.com/support/faq/ViewFAQ_US.asp?id=3158&lge_id=1

8.7 System Boot Drives

Use the fastest system drive you can install in your system, from SCSI Ultra3 to ATA UDMA 66 (UltraDMA) EIDE drives. We recommend drives sizes of 9 GB or higher. Generally, the SCSI drive alternative will provide faster performance due to command queuing, but 66MHz UltraDMA drives are adequate. Be sure to apply the latest UltraDMA driver from the motherboard manufacturer, as Windows NT 4.0 does not natively support UltraDMA.

8.8 Striping

We recommend that you use NT striping to configure the AV disk array. RAID controllers are not required. It is important that all the drives in the stripe are the same make, model and firmware revision (note this latter, problems can arise with apparently similar disks that have different firmware revisions).

8.9 Defragmentation

File fragmentation cannot be avoided. When files are written, deleted, and re-written to a disk drive, the drive is writing the data in the form of blocks as defined by the file system allocation size. If there is not enough contiguous space on the disk to accommodate the file, the file system breaks up the file into pieces, writing as many contiguous blocks as it can in one spot then jumping to another location on the disk to complete the write. As a disk becomes severely fragmented, performance can degrade severely.

There are two ways to eliminate or minimize fragmentation: periodically use defragmentation utilities such as Executive Software's Diskeeper or temporarily move media files to another drive or array, clean or re-format the AV drives, and move the files back. This will force files to be written in a contiguous manner.

8.10 EIDE and Ultra/DMA-66, 100 Drives

Not normally used for AV drives unless controlled by an EIDE array controller. Most motherboards incorporate two Integrated Drive Electronics (IDE) controllers as standard equipment. The EIDE or Ultra/DMA-66 (also referred to as ATA) is a newer version of the IDE interface, and can return respectable performance in systems where SCSI boot drives are not used. Be sure to apply the latest UltraDMA driver from the motherboard manufacturer or Intel (...), as Windows NT 4.0 does not natively support UltraDMA.

9 Addendum

9.1 TARGA 3108 Update

As of June 2002, new TARGA 3000 cards that leave manufacturing are labeled “TARGA 3108”. This hardware revision contained minimal component updates, and offers no functional enhancements. Over extended periods of shelf life, hardware is subject to minor revisions, and this was a necessary manufacturing change.

9.1.1 How do I determine which revision of TARGA card that I have?

If you have ordered a TARGA 3000 system in the past few months, you most likely have a TARGA 3108 card. In order to determine the hardware revision, close all applications on your desktop, and follow these steps:

a.) Click on the Windows start button
b.) Select Programs->TARGA 3000-> Board Monitor
c.) Once the Board Monitor is open, view the third line of text. It should read TARGA 3100, 3105, or 3108.

In the event of any incompatibility with your system using this card revision and the TARGA 3000 v1.5 drivers, please refer to the Pinnacle T3K Download section and follow the steps to download an updated .inf file. The web site address is: http://www.pinnaclesys.com/support/display.asp?FileID=1169&ProductID=404

9.2 Additional TARGA 3000 Cookbook Updates

Pinnacle Systems will continue to update this hardware configuration cookbook on a regular basis. The next update will include several disk arrays and workstations. If there is a hardware component that you would like to see be certified on the TARGA 3000 hardware platform, please use the T3K suggestion box link on the TARGA 3000 support site to submit a feature request.

The link to this site is:
http://apps.pinnaclesys.com/survey/enter.asp?survey_id=127&ProductID=404&SubDocTypesID=158